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THE
RETROSPECT OF MEDICINE:

BEING

A HALF-YEARLY JOURNAL

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND
PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

EDITED BY

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ERRATA.

Page 178, 2nd line from bottom, for "apparent" read afferent (in some copies).
 ,, 182, 11th ,, ,, dele "not."
 ,, 147, chloral is misprinted "choral" in three instances.

SYNOPSIS.

AN ABSTRACT OF THE MOST PRACTICAL ARTICLES IN THIS VOLUME, WITH OTHER SHORT ARTICLES FROM THE MEDICAL JOURNALS, SHOWING THE MOST IMPORTANT INDICATIONS OF TREATMENT PUBLISHED BY DIFFERENT WRITERS DURING THE HALF-YEAR. ARRANGED ALPHABETICALLY.

AFFECTIONS OF THE SYSTEM GENERALLY.

ANTIPYRINE AND ANTIFEBRIN.—Dr. G. Walter Barr, of Bridgeport, Ill., has made a most careful clinical study of antipyrine and antifebrin on himself whilst suffering from neurasthenia complicated with malaria. He thus sums up his experience:—

Antipyrine.

Antifebrin.

Lowers temperature in half an hour.	In an hour or more.
Effect lasts two hours.	Effect lasts six hours.
More diaphoretic.	More diuretic.
Depressing after-effects.	No after-effects.
Cerebral sedative.	Cerebral vaso-motor & muscular (?) stimulant.
Dose, 15 to 30 grains.	Dose, 5 to 15 grains.
Tolerance from continued use.	Tolerance from continued use.

This table, he says, will suggest the selective use of the two drugs. From the patient's point of view (which is really coincident with the physician's), antifebrin is much to be preferred in continued fevers, because the dose is one small capsule instead of three; the effect lasting so long requires one-third the number of doses; the tonic stimulation excels the depression and after malaise; and the cost is one-fourth that of antipyrine. The antipyretic action of antifebrin is as strong or stronger than that of antipyrine, and its only objection is its slowness of action. In insolation and other cases where a quickly acting antipyretic is necessary, and when it has a specific action on the pathology of a disease, as is claimed in rheumatism, antipyrine is to be preferred. Whenever one can wait an hour for the antipyretic action to begin, he greatly prefers antifebrin, and so he believes will the patient also. He regards its stimulant or tonic effect as very valuable in weak patients. (Practitioner, Oct., p. 294.)

GLANDULAR SWELLINGS CURABLE BY ARSENIC.—At the Clinical Society on March 25th, 1887, Mr. Frederick Treves read a paper on a Form of Glandular Swelling which is cured by Arsenic. He drew attention to the obscurity that attends both the pathology and the clinical history of certain chronic glandular affec-

tions. These affections are covered by such terms as the following: hypertrophy of glands, lymphoma, malignant lymphoma, lymphadenoma, Hodgkin's disease, and lympho-sarcoma. These glandular swellings are considered to be uninflamatory, have no relation to scrofula or syphilis, and are clearly separated from the gland disorders that attend leukæmia. They possess the common characters of a slow origin without apparent cause, a slow but progressive growth, and an absence of all inflammatory phenomena. Histologically there would appear to be no means of distinguishing one of these affections from another. Apart from this, objection may well be raised to the terms hypertrophy and lymphoma. Without limiting himself to any special term, Mr. Treves desired to draw attention to the clinical aspects of a certain form of non-leukæmic gland enlargement that could be cured by arsenic. The patients are usually past middle age; they present no peculiar constitutional defect; there is no suggestion of gout, rheumatism, or scrofula. There is no leukæmia. The neck is usually involved. The gland tumours appear on both sides without disturbances in the periphery. The masses vary in size from a hazel-nut to a duck's egg. They are soft, elastic, homogeneous, movable, painless, and free from tenderness. They show a disposition to spread without limit. The temperature is normal, and suppuration does not take place. Mr. Treves gave instances of the cure of such cases by the use of arsenic. The drug is given in the form of liq. arsenicalis, commencing with a dose of five minims and increasing to twenty minims three times a day. The treatment has to be kept up for some months—one to six. The glands waste, some few suppurate, and in such instances the resulting sinuses heal without further treatment. In cases where the whole neck has been filled with great glandular masses the tumours have wholly disappeared after a treatment of from four to six months. Some of these cases, at least, would probably be covered by the term Hodgkin's disease. Mr. Treves concluded by an allusion to Dr. Köbel's paper on the treatment of malignant growth by arsenic administered by the mouth, and also hypodermically. (Lancet, April 2, p. 679.)

GOUT.—*Colchicum in.*—Whether colchicum should or should not be administered is often a question of debate. Dr. Carter, of Birmingham, gives his own conclusions in the current number of the Birmingham Medical Review. He believes that this drug should be avoided in all cases attended with debility and cardiac feebleness, and that its use should be limited to early attacks of a sthenic type, and when the pulse is one of high tension. From the liability of colchicum to depress the system and to interfere with renal elimination, its administration should not be continued for a longer period than is absolutely necessary for the relief of

pain. In order to prevent the employment of a larger quantity than is necessary for this purpose, it is desirable to give the drug in moderate doses, repeated at short intervals, rather than in a large single dose. He argues that there is no evidence of the curative influence of colchicum, and thinks, with many others, that, in spite of the relief afforded, it tends to favour recurrence, and that it is safer to avoid its use altogether if this is possible. We are disposed to admit the general soundness of these views; but the evidence in favour of colchicum promoting the development of gout is not entirely satisfactory. Dr. Carter's observations on colchicum as a vascular depressant are rational, and he has found that such dilators of arterioles as nitrite of amyl, nitro-glycerine and nitrite of sodium are scarcely inferior to colchicum in affording relief to gouty inflammations. Veratria, a powerful vascular depressant, is a principal constituent in a well-known nostrum for gout. Besides filling the cutaneous arterioles and swelling the skin, which actively perspires, with lowering of the general blood pressure, colchicum diminishes the function of the sensory nerves, and may in this way tend to relieve pain; the sweating may also aid elimination, and relieve the kidneys from some of their work. (Dr. A. H. Carter, *Lancet*, Oct. 29, p. 875.)

GRAVES'S DISEASE.—*Case cured by Excision of the Thyroid Gland.*—At the Edinburgh Medico-Chirurgical Society, on June 15th, 1887, Professor Fraser showed a case of exophthalmic goitre in which Professor Lister had removed the greater part of thyroid gland ten years ago. The patient was a female, and the operation was performed on the 18th July, 1877. Five years before the operation she had been an attendant on a lady who appeared to have been exacting, and whose exactions wore out and often startled the patient. She was, for example, in the habit of ringing with considerable violence a large bell hung in the maid's room, and this particularly during the night. After some time the girl's health broke down. She suffered from palpitations, flushings, and weakness. About eighteen months later her friends noticed that her neck was large, and afterwards that her eyes projected. In little more than two years the complete phenomena of exophthalmic goitre had occurred. The enlargement of the neck increased, and ultimately interfered with the power of swallowing. She had sensations of choking, and at times violent dyspnoea, and on account of these symptoms she came into hospital to be under Professor Lister's treatment. The tumour was removed. In the course of the operation it was found that it was very deep, and that adhesions had formed, rendering its removal by no means easy. Sir Joseph cut away the bulk of the tumour, and afterwards used the sharp spoon to remove adherent portions. The pulse rate before the operation was about 130.

Five days afterwards it had fallen to 72, and the irregularity of the heart's action had disappeared. In a few weeks the exophthalmos had reduced itself very distinctly. The operation, therefore, had relieved all the symptoms of exophthalmic goitre. About eight months afterwards, during a catamenial period, she suffered from general convulsions, which lasted several hours. Then for two or three years she had at each catamenial period an attack of convulsions, which latterly became less severe, until they disappeared. They were not attended by any loss of consciousness. There had, however, been a single attack about two and a half years ago, but none since. These convulsions were interesting in connection with experimental operations upon dogs and monkeys, in whom myxœdema and convulsive phenomena have been observed after the removal of the thyroid. She showed no evidence of myxœdema, but the thyroid had not been altogether removed, and what appeared to be a part of the isthmus could be discovered on palpation. At the present moment the patient unfortunately suffered from phthisis. (Dr. Thomas R. Fraser, *Edinburgh Medical Journal*, Oct., p. 347.)

Graves's Disease.—Pigmentation of the Skin in.—The favourite situation for pigment in Graves's disease would appear to be around the prominent eyeballs, on the face generally, neck, axillæ, areola of nipples, abdomen, and upper and inner aspects of the thighs. The skin is smooth, and at times the patch is defined, or it may fade imperceptibly into the normally coloured skin. Wherever pigment occurs normally, there it is found increased, and the colour would appear to vary from a dirty, pale liver colour to a deep brown. The patches in our male patient are very dark indeed, and it is interesting to note that as the general condition has improved under treatment, so the patches of discoloration have become paler and smaller. In his case, especially on the wrists, we notice smooth, white patches of skin that are surrounded by areas of pigmentation. To the occurrence of leucoderma in Graves's disease attention has been called by Trousseau, and later by Reynaud in 1875, and from time to time cases have been published in which leucoderma was a noticeable feature; but from what I have seen of late years of the disorder, I am convinced that sufficient stress has not been laid upon the changes of the skin, and that whereas true leucoderma is comparatively rare in exophthalmic goitre, pigmentation allied to Addison's is one of the most constant signs of the disease, and is at least as deserving as Graefe's symptom to be included with so-called cardinal signs. The question arises, Is this pigmentation simply symptomatic of a general disorder, and akin to the discoloration so frequently noticed in cases of cancer, tuberculosis, malaria, in which it is probably in great measure the

result of anæmia and irritation from central organs? Or is it to be ascribed directly to the nerve-changes supposed to underlie Graves's disease, just as in the case of Addison's bronzing? This is, of course, a difficult question to answer, and raises some very important points in the pathology of pigment deposit. On the whole, I am disposed to think that in these cases there is a peculiar disposition to the cutaneous deposit of pigment arising out of special and general causes, amongst which may be mentioned perverted nerve-function, misapplied action of the thyroid (to which we vaguely ascribe hæmopoietic functions), great tendency to dilatation of the capillaries of the skin (witness Professor Trousseau's cerebral *tache* or macula), and anæmia. (Dr. David Drummond, Newcastle-on-Tyne, British Medical Journal, May 14, p. 1029.)

IODISM.—*Prevention of by Belladonna.*—M. Aubert, of Lyons, finds that the coryza and other troubles which are caused by the administration of iodide of potassium to those who are intolerant of it may be prevented by the simultaneous exhibition of belladonna. He records a case in which the iodide, both in small and large doses, caused the usual symptoms of iodism, and after long-continued administration of the drug tolerance was in no way established. As soon as "pilules of belladonna" were given with the iodide, the unpleasant effects were no longer felt. Aubert affirms that the tolerance sometimes continues when the belladonna is omitted. (Medical Chronicle, Aug., p. 415.)

SCARLET FEVER.—*A Method of Prophylaxis in.*—[The method is described in the course of an account of some highly important and laborious investigations recently made by Dr. Allan Jamieson and Dr. Edington, of Edinburgh, into the Nature of the Contagium of Scarlet Fever.] The two sources of infection are probably the exhalations from the mouth and throat in the early stage, certainly the particles of dry cuticle cast off in the later. The method recommended was to disinfect the throat by painting it frequently with a strong solution of boracic acid in glycerine (a saturated solution of boroglyceride in glycerine). In dealing with the skin, more exact methods were available. Those consisted in the employment of warm baths every night from the very first, and in the application to the entire surface of the body, including the head, of an ointment composed of carbolic acid gr. 30, thymol gr. 10, vaseline ℥j, simple ointment ℥j, night and morning. In this way he believed that the scales of epidermis would never become contagious, and actual experience completely bore this opinion out. Dr. Jamieson's theory, stated concisely, is, "That the contagium of scarlet fever present in the scales when inhaled or swallowed produced such changes in the blood and tissues as to lead to the symptoms

characteristic of the disease ; that this contagium, which was in all likelihood an organism, in due course of time reached the skin and there ripened, so that when the dry flakes of keratine were cast off, these contained the organism in a state ready for immediate multiplication, when placed under suitable conditions. Arguing from the domain of cutaneous parasitic diseases, it seemed to me permissible to anticipate that, were the soil kept continuously in a state unfavourable for the ripening of the organism, it would either perish, or at least be thrown off immature. It also appeared evident to me that for the full development of the particular contagium of scarlet fever air was necessary, since it seemed that the late desquamation contained it in largest amount." It may be argued that the urine in post-scarlatinal nephritis, the pus from suppurating cervical glands, or the muco-purulent discharge from the ear or nose, in instances where these sequelæ occur, might all be sources of contagion. This may indeed be true, yet it is well known that mild cases, in which the only abnormal condition is the desquamation, do spread the disease. Hence, as "peeling" is the sole constant element, it is also the chief source of danger. (British Med. Journal, June 11, p. 1262.)

Scarlet Fever.—Treatment of by Biniodide of Mercury.—Whilst attending a severe case of scarlatina anginosa, in a little girl of five years, in which the inflammation of the skin was so intense that large patches of pus were formed under the epidermis upon the chest, I had occasion to prescribe the biniodide of mercury for acute earache and headache she complained of. In twelve hours the medicine had done good service, and at the same time the mother noticed that the throat symptoms had abated considerably, and that the child was in every way improved. With the addition of chlorate of potash and ammonio-citrate of iron, the medicine was continued, and the child made a rapid recovery, although she had an attack of dropsy subsequently. I then gave the biniodide in other cases, and found that, if begun with on the first day of the fever, it arrests it, prevents the rash developing, and rapidly cures the inflamed throat. This I attribute to the germicidal action of the biniodide, which is carried by the diffusible potassic iodide to every corner of the circulation. In those cases which are ushered in with urgent feverish symptoms and dry tongue, I combine the liquor ammoniæ acetatis with the biniodide mixture for a day or two; but, in ordinary cases of scarlatina simplex, I give it with the ammonio-citrate of iron simply. Thus: Sol. hyd. bichlor. ℥ ii ℥ iii, potass. iodid. gr. x-xv, ferri ammon. cit. ℥ ss, syrupi ℥ ss, aq. ℥ iss. One teaspoonful every two hours for a child of from two to six years. I have used the sodic iodide as a solvent and vehicle for the biniodide, but it seemed to induce greater spanæmia than

usual, on account, I think, of the solvent action of soda salts upon the fibrin elements of the blood; so I do not advise its use in scarlet fever, although it acts rapidly and well in diphtheria (in which disease, of course, the effusion of false membrane is a prominent symptom). When the patient has dutifully taken the biniodide mixture every two, three, or four hours, for ten days, and the temperature is normal, I prescribe the usual steel and chlorate of potash mixture. If the biniodide be discontinued at the end of one or two days, the rash begins to appear again upon the skin, again to disappear on the resumption of the medicine. If the rash have got complete hold upon the skin so as to have induced acute inflammation before the treatment is begun, desquamation, though greatly modified, will not be entirely prevented, because the cause of the destruction of the cuticle will have led to the effusion of inflammatory products, and to the consequent interference with its nutrition. By thus following and destroying the germs of scarlet fever, its worst sequelæ are prevented. (Dr. C. R. Illingworth, *British Med. Journal*, Sept. 17, p. 614.)

TYROTOXICON.—*A Milk Ptomaine producing Diarrhœa in Children.*

That heat and atmospheric impurities have much to do with the causation of the diarrhœa I am ready to admit; but their chief evil effects are upon the food of the child. The demonstration of this now amounts almost or quite to a certainty. Three years ago the writer discovered in poisonous cheese a ptomaine which produced nausea, vomiting, and diarrhœa. Later the same poison was found in ice-cream, and in milk. The poison has now been isolated by as many as five chemists, and its chemistry and the conditions under which it develops, as well as its action, are fairly well understood. Chemically, the poison is diazobenzol, which may be made artificially by the action of nitrous acid gas at a low temperature upon the nitrate, butyrate, or other salt of anilin. It is decomposed when heated with water to near the boiling point. It is developed in milk by the growth of a germ, which multiplies very rapidly when the conditions are favourable. These favourable conditions consist principally of exclusion of air, or the presence of a limited supply of air, and a comparatively warm temperature, the germ developing most rapidly at about 98° F. If milk be placed in cans, and tightly closed as soon as it is drawn from the animal, and then be kept warm, the conditions for the development of the poison are favourable. (Dr. V. C. Vaughan, p. 131.)

VOIKMANN'S ANTISEPTIC FLUID.—Thymol, 1 part; alcohol, 10 parts; glycerin, 20 parts; water, 100 parts. The above, as used by the German surgeon whose name it bears, is a useful formula for antiseptis by thymol. (*Therapeutic Gazette*, Aug. 15, p. 557.)

AFFECTIONS OF THE NERVOUS SYSTEM.

AMYLENE HYDRATE.—*A New Hypnotic.*—The new hypnotic which Professor v. Mering, of Strassburg, introduces to our notice is a tertiary amyl alcohol discovered by Wurtz. According to the Pharm. Zeitung (July 9th, 1887), it is prepared by heating amylene (which contains trimethyl ethylene) with sulphuric acid. Amyl sulphuric acid is formed, and this when distilled with water is converted into the new soporific which is now known to chemists as dimethyl-ethyl-carbinol, though Mering has thought it well to retain the older name. Amylene hydrate is a colourless fluid boiling at 100° C., and having a specific gravity of .81. It is soluble in eight parts of water, and has a peculiar ethereal odour, with a slight taste of camphor and an after taste of peppermint. The satisfactory results obtained from the administration of moderate doses in the lower animals led Mering to try it on man, and during the past two years he has given it 350 times to 60 patients, chiefly in cases of sleeplessness, connected with nervous disorders. In doses of 50 to 80 minims, he finds it to be a useful and safe hypnotic. In about half an hour after its administration it induces sleep which lasts six or seven hours. Only in four cases was it given without avail. No excitement precedes its soporific effect and no digestive disturbance is produced by it. When a patient wakes out of sleep brought about by amylene hydrate he feels perfectly well. In only one case was some giddiness complained of. (Dr. Leech's Report in Med. Chronicle, Sept., p. 464.)

ANTIPYRIN FOR THE RELIEF OF PAIN.—The value of antipyrine will best be appreciated when it is given for rheumatic or gouty affections accompanied by painful arthritis, or, still better, in nervous conditions characterised by pain. In fifteen cases suffering from subacute rheumatism or hydrarthrosis, which had resisted the actual cautery and salicylate of soda, the pain and swelling of the joints disappeared in a few days and did not return, when antipyrine in small doses was continued for a week. The same results were obtained in acute attacks of gout, superadded or not to the chronic affection, with uratic deposits or tophi, and localised in the wrists or joints of the lower extremity, when the drug was given in doses of from 4 to 6 grammes in the twenty-four hours. The pain ceased and the swelling disappeared in from two to four days without any undesirable effect being produced on the heart or kidneys. M. Sée quotes 14 cases of cranial neuralgia which rapidly yielded under treatment; 6 cases of migraine of old standing, 5 of which recovered in two hours, one patient only being unrelieved as she was unable to take the drug. A second series of 18 cases comprised neuralgias or neurites and muscular pains, 5 of which were cases of sciatica, 3 herpetic neurites, several cases of old

standing lumbago, &c. A third series of cases bore on the lightning-pains of locomotor ataxy. The treatment was successful with only one or two exceptions, in doses of from one gramme given in solution every hour or every four hours. If any inconvenience resulted from its use, the dose was halved and given more frequently. He also found it very useful in the treatment of certain forms of angina pectoris. A peculiar eruption, resembling urticaria, or scarlatina, is apt to make its appearance, but it soon goes away when the dose is lessened. The drug can be detected in the urine by means of the perchloride of iron for two or three days after the cessation of the treatment. Its influence in relieving pain would appear to be dependent on the action of the drug on the spinal cord as well as on the peripheral motor nerves. M. Sée calls attention particularly to the fact that the heart is not affected, and the blood-pressure remains unaltered. He concludes by expressing the opinion that in antipyrine we have a most useful and innocuous remedy for pain. (M. Sée, *Med. Record*, June, p. 253.)

ARSENIC.—*Its Influence in producing Peculiar Affections of the Nervous System.*—In the course of an address on the study of skin diseases as illustrating the doctrines of general pathology, Mr. Hutchinson says:—The influence of arsenic upon the nervous system has already been referred to in speaking of herpes, and I then mentioned Christison's facts as to its being a cause of epilepsy, and of local forms of paralysis when taken in poisonous doses (by accident or with the intention of suicide). I have now to add the expression of my conviction that we sometimes induce epilepsy and other nervous symptoms by the medicinal employment of this drug, and that it behoves the neurologist, when he encounters anomalous forms of paralysis, always to make inquiries as to whether arsenic has been given. I have recently witnessed a fatal case, in which partial paraplegia was the first symptom in a series of nervous phenomena, which ended by convulsions and coma. The patient, a healthy young man, had administered to himself very large doses of arsenic for the cure of psoriasis, and had continued them for a very long time. His case is only one of several bearing upon the same subject. (*British Med. Journal*, July 30, p. 231.)

BRACHIAL MONOPLÉGIA FOLLOWING TYPHOID FEVER.—Dr. Robert S. Archer records an instance of this exceedingly rare and important condition, evidently due to a neuritis affecting the majority of the branches of the brachial plexus. The patient was a man, aged 22, suffering from typhoid fever, complicated by ulceration of the tonsils, uvula, and pharynx, and consolidation of the base of the left lung. On the fifteenth day he complained of numbness in the right arm, and on the twenty-first day the

limb was noticed to be very weak, and the grasp of the hand extremely feeble. On the twenty-eighth day great pain and heat were noted as being present in the arm and hand, which continued for several days. On the thirty-fifth day, in addition to almost total loss of power, there was considerable wasting. From this time strength gradually returned, till on the sixty-seventh day the patient had practically recovered. (Dr. R. S. Archer, Dublin Journal of Med. Science, July, p. 13.)

BRAIN SURGERY.—[In the British Medical Journal for April 23, 1887, Mr. Horsley gives in tabular form all the cases upon which up to that date he had operated by his method, published in Oct. 1886 (see *Retrospect*, vol. 95, p. 255). Through pressure on our space we are able to give only the shortest summary of Mr. Horsley's results. Of the ten patients operated upon eight suffered from epileptiform seizures with paralysis more or less complete and some mental disturbance; one suffered from constant localized pain in the head; and one suffered from vomiting, headache, and double optic neuritis. The last case was the only fatal one, all the remaining nine suffering no ill effects from the operation. In all the non-fatal cases the wound healed by immediate union or nearly so. Strict Listerism was observed in all the operations. All the patients were under thirty-nine years of age, the youngest four, the oldest thirty-eight. Of the eight cases suffering from fits, paralysis, and some mental disturbance, all were more or less, and many very greatly, benefited. In five of these cases the fits seem to have been entirely arrested, and in the other three were reduced to a minimum. So far as the paralysis was concerned it could not be expected, from the nature of the lesions detailed in some of the cases, that much if any improvement could possibly ensue. And in five of the cases the condition of the limb remained the same as before operation; in one case it "*improved somewhat*," in another it was "*much improved*," and in another it improved in the upper but failed to do so in the lower limb. In six cases the mental condition was better than before the operation. In the case in which the operation was performed for the relief of constant pain, a piece of the parietal bone, the inner table of which had been perforated and was being eroded by a Pacchionian body, was removed with complete success, there having been no return of the pain since the operation. The fatal case was one in which a tubercular mass was removed from the cerebellum. This patient died nineteen hours after the operation.] (Mr. Vincent Horsley, British Med. Journal, April 23, p. 863.)

CHRONIC TOBACCO POISONING.—An abstract of a paper by Favarger which was read before the Vienna K. K. Gesellschaft der Aerzte, is given in the Münch. Med. Wochensch. After

describing the general effects and chemical composition of tobacco, the author goes on to speak of chronic tobacco-poisoning. About a decade, more or less, of smoking of strong cigars or cigarettes is necessary for its development. Four types of "smoking" are given—viz., swallowing the smoke, in which case nicotine may act direct on the gastric mucous membrane; inhalation of the smoke, injurious from its effects on the pharynx and larynx; so-called "cold smoking," i.e. chewing the ends of unlighted cigars, in which case saliva more or less impregnated with nicotine is swallowed; and finally, the use of foul cigar or cigarette mouth-pieces (or dirty pipes). The circulatory and digestive apparatus are those most frequently affected, the commonest symptom of chronic nicotism being palpitation of the heart. As a rule this disappears on leaving off smoking, but it may persist. If at this stage tobacco is not given up, cardiac weakness, respiratory trouble, and cardiac asthma set in; occasionally, indeed, steno-cardiac attacks (pseudo angina pectoris). Physical examination reveals either nothing abnormal, or else the signs of chronic myocarditis or fatty degeneration of the heart. As regards the stomach the symptoms are—want of appetite, epigastric pains, a feeling of fulness, and constipation alternating with diarrhoea. Disorders of the central nervous system connected with excessive use of tobacco, are attacks of faintness, and sleeplessness. The author had a case under treatment in which it was probable chronic nicotism had resulted in fatty degeneration of the heart. The patient, aged 60, had been a strong smoker for several decades, often felt faint after the use of strong tobacco, and was subject to pains in the stomach. Some weeks before his death, which was caused by hemorrhage from an ulcer in the stomach, the patient had frequent violent attacks of palpitation of the heart, together with asthma. Up to the time of death the temperature was subnormal (34.6° to 36.6° C.), the pulse abnormally frequent, and the pupils much contracted. The post-mortem examination showed serous effusions in both pleural cavities, dilatation and advanced fatty degeneration of the heart, and a gastric ulcer, which had eroded the superior coronary artery. Inasmuch as there had been no previous alcoholism nor great loss of blood (apart from the fatal hemorrhage), the fatty degeneration of the heart must be set down to chronic nicotism; and was apparently due to cardiac ischæmia from arterial contraction—viz., of the coronary arteries of the heart. The author concludes by strongly urging smokers who are affected by palpitations to leave off tobacco; or else to carefully observe the following rules:—1. Never to smoke on an empty stomach. 2. To use very mild tobaccos. 3. To keep mouthpieces and pipes scrupulously clean. (M. Favarger, *Medical Record*, June, p. 248.)

FACIAL TIC.—*Freezing in.*—Rhigolene is by far the best agent, far better than ether, and it is possible that in sudden freezing we have a therapeutic means too much neglected. Used alternately with heat, it certainly is of value in neuritis, and certain neuralgias. When employing the spray for tic, I use it over the expansion of the facial, and over the exit points of the fifth nerve. The reaction is intense, and the part sprayed remains deeply flushed. When it becomes sore, it is only needful to avoid the tender region for a day or two. The nature of the influence thus exerted, and probably affecting most the sensitive nerve, is but a matter for speculation. It is some time after the spraying before the maximum effect is obtained in the way of lessening the spasm, and this fact reminded me of the interesting results obtained by freezing the skin in birds, when often ten minutes elapsed before the convulsive acts thus produced in birds were to be seen. No such extreme phenomenon follows the use of the spray in man or quadrupeds, but, without doubt, even in these surface freezing must profoundly affect the centres. (Dr. Weir Mitchell, p. 154.)

Inveterate Facial Neuralgia.—*Use of Cocaine in.*—Dr. Myrtle, of Harrogate, publishes the following interesting case:—Mr. R. C., aged 69, consulted my father nine years ago on account of neuralgia of the right fifth nerve; the pain sometimes attacked the superficial branches, sometimes those supplying the gums and mucous membrane of the cheek and lip; it speedily became of the epileptiform or convulsive type, and defied all remedies. My father sent him to Mr. John Marshall in 1884, with a view to division of the nerve-trunk, but this was not thought advisable, and he was treated for gout (gout being both hereditary and acquired). Little benefit followed. Drs. Broadbent and Gowers at different times also saw Mr. C.; cannabis indica, belladonna, quinia, arsenic, iodides, bromides, &c., all failed in turn. At last we tried cocaine in a 5 per cent. solution to the gums and mucous membrane, with menthol and olive oil in equal parts to the skin of the cheek and outer angle of the jaw, with the most successful results. Gradually we had to increase the strength of the cocaine to 25 per cent., and this invariably affords almost immediate ease; the attacks are becoming less and less frequent and severe; great care is taken that none of the solution is swallowed. (Dr. Myrtle, Brit. Med. J., Ap. 23, p. 875.)

FRIEDREICH'S DISEASE.—Professor Charcot has an able clinical lecture on the differential diagnosis between this disease and tabes on the one hand and disseminated sclerosis on the other. He presented two patients, the younger of whom had suffered from Friedreich's disease for ten years, the elder from tabes for a similar period. In both there was marked motor inco-ordina-

tion of the upper extremities. In the lower extremities there was no loss of muscular power, and the patients could stand without support, but there was instability when the feet were approximated or the eyes were shut, and both had the gait which is characteristic of tabes. There was an absence of the knee-jerk in both. Having thus shown the resemblance between the two cases, he proceeded to draw attention to the points on which they differed. The tabetic patient when seated was perfectly at rest, while the other was in a state of perpetual movement, the movements being involuntary and slow, and resembling those seen in athetosis. The head oscillated from side to side or nodded, and from time to time there were grimaces produced by the contraction of some of the facial muscles. These movements are not met with in ordinary tabes. In the tabetic case there were the following characteristic features: diplopia strabismus, and at other times there was drooping of the left eyelid. There was no atrophy of the optic nerves, but the Argyll-Robertson sign was well marked. In the case of Friedreich's disease the pupils reacted to light and to accommodation, they were equal, and there was neither diplopia nor strabismus. He also presented a phenomenon which only belonged exceptionally to tabes, and that was a degree of nystagmus. This symptom belongs to the symptomatology of disseminated sclerosis; and the patient presented another symptom belonging to that affection, namely, the embarrassment of speech, the slow articulation as if the words were being scanned, which is quite different from the speech of general paralysis. This slowness of articulation and *scansion* of the words formed a striking contrast to the speech of the tabetic patient. The case might be regarded as one of tabes with disseminated sclerosis, or as a disseminated sclerosis with sclerosed areas in the posterior columns giving rise to the symptoms of tabes, but the lecturer controverted both these views. Summing up the symptoms under their various systems, in Friedreich's disease there are not the lightning pains, the hyperæsthesias or anæsthesias, nor the atrophy of the optic nerves which are present in tabes. There are not the visceral neuroses nor the trophic lesions which occur in tabes. It differs from disseminated sclerosis in not having the vertigo, nor the epileptiform attacks, nor the white atrophy, nor the optic neuritis; the choreiform instability does not cease during repose, and it is rhythmic, not spasmodic or jerky; the motor difficulties are not influenced by sight; the knee-jerk is absent instead of being exaggerated. (Dr. Gibson, Edin. Med. Jour., Aug. p. 181.)

“GOING TO SLEEP” OF THE LIMBS.—The symptom which patients call “going to sleep” of the limbs, and especially when it occurs in the lower extremities, is one of considerable interest. It is a sort of numbness attended by defective perception of size,

so that the limb feels unwieldy and large. There may be no actual anæsthesia, and no "pins and needles." An intelligent patient, whom I pressed to describe his sensations, said it was exactly like what one feels after the foot has been asleep from pressure on the chair, and the tingling of "pins and needles" has just passed off. The following case may illustrate this symptom. A healthy-looking farmer, aged 40, came to me complaining chiefly of "sleepiness in his lower limbs." It had been present almost continuously for two years, being, however, at some times much worse than others. It gave him great annoyance, for although he could walk well and was accustomed to ride much on horseback, yet his legs never felt comfortable; they were always, as he said, numb, "just short of the pins and needles stage." The condition was pretty much the same in both the lower extremities, and did not affect any other part. The concomitant symptoms left no doubt that it was part of locomotor ataxy. The pupils were small and sluggish, the patellar reflex was absent, and severe pains had been experienced in the legs on many occasions; the pains had been of the ordinary gnawing or burning kind, but it was interesting to note that they were as a rule worse in the daytime, and were better in bed. They were invariably worse when fatigued, and occasionally, when extra-tired, they had kept him awake all night. The legs were occasionally restless, and he could not keep them still for more than a few seconds at a time. The connection between the pains and want of rest was curiously illustrated by the patient's statement that if he missed an hour's sleep which he was accustomed to take in the afternoon, he invariably had a bad night from pains in the leg. It was his belief that iodide of potassium had frequently relieved his pains, but as they were of irregular occurrence, it was difficult to feel certain on the point. This patient's antecedents were of much interest, and I must suggest three causes possibly acting in combination as those to which his disease was due. He had suffered from syphilis fifteen years ago, he had been married three years, and he had on one occasion exposed himself to unusual fatigue, accompanied by wet and cold. From the occasion last alluded to he definitely dated the commencement of his ailment. He had been out at a sham fight with his corps of volunteers on a very cold and rainy day. He had been on his feet from eight o'clock in the morning till eight in the evening, wet through, and often standing still for an hour or two at a time. When he got home in the evening he found, for the first time, that the backs of the thighs were numb, and after this it soon extended to his legs. As regards the syphilis, it appeared that he had been well treated, and had no secondaries. He had one healthy child. (Mr. J. Hutchinson, Brit. Med. Journal, May 24, p. 1150.)

HEMICRANIA.—*Antipyrin in.*—Ungar, of Hamburg, was led, from the similarity of action between salicylate of sodium and antipyrin, to give the latter for hemicrania. From his own observations and those of his colleagues, he was led to believe that antipyrin is more rapid and certain in its effects than the salicylate. In the beginning of the attack, and in its prodromal stage, the remedy had an abortive effect or made the paroxysms much milder than usual. Patients who were generally obliged to forego their usual occupations, and who could not sit up during the attack, were generally able to go about with comfort. When taken after the inception of the attack, and when it had developed considerable intensity, antipyrin had still a most favourable effect. Among the patients thus benefited were those who had tried all other known remedies without result. Antipyrin, however, will not relieve, in all cases, the distressing symptoms of hemicrania; there are patients with whom it has no effect, and others who are upon one occasion benefited, and who receive no relief in another trial of the remedy; the observer was not able to recognize a ground for discrimination in these cases. In those cases in which antipyrin acted favourably a dose of fifteen grains, once administered, was generally sufficient; exceptionally, twenty-three grains were given once. Its good effects were usually manifested in one hour after taking, and when this was not the case, the first dose was repeated, and good results rarely failed. It was generally ordered in capsules or wafers. Dangerous or unpleasant effects were not observed after its use. (Ungar, Medical News, March 5, p. 266.)

INFANTILE CEREBRAL PARALYSIS—(HEMIPLEGIA.)—To sum up briefly the symptoms of this form of paralysis in children, we may say that it usually attacks children under one year of age, commencing with a prolonged convulsion, lasting for several hours, and sometimes even for some days, the convulsion being frequently limited to the side subsequently found to be paralysed, though often at first general. When the fit passes off the child is found to be paralysed on one side, and may have lost his speech, or his reason, or both. Sometimes the child comes out of the first fit unharmed, but is left paralysed by a second or subsequent seizure. A little improvement, especially in the leg, may be looked for early, but complete recovery is not common; arrest of growth of the paralysed limbs, a certain amount of rigidity, and clumsy, irregular movements are frequently met with. Sensation in the paralysed limbs is rarely affected. The face is occasionally paralysed on the same side as the limbs. Unilateral atrophy of the skull on the side opposite to the paralysis is sometimes very marked. The paralysis may come on after one of the acute infectious diseases, or as a result of syphilis, but in a considerable number of cases no cause can be found.

The prognosis as regards life is good ; children rarely die during the initial convulsion, or, if they do, it is before the affection has been recognised. During the fit we might put the child into a bath, using a warm one if the temperature were not raised, or if any fever were present, a cool bath, proportionate to the degree of fever. In the uncertainty which exists as to the exact pathology, there is little else we could do with safety or advantage ; to abstract blood would, in the case of embolism or thrombosis, only tend to make the clot firmer, but might be beneficial in a traumatic case, where presumably there is some meningo-encephalitis going on ; a blister behind the ear on the side opposite to the convulsed limbs would do no harm and might do good ; and of course, any source of reflex irritation—teething, worms, etc.—would be sought for, and, if present, relieved as far as possible. After the convulsion a prolonged course of iodide of potassium and alkalies would be the best line to follow, and it is surprising how well children take the iodide, even when administered in an unsparing manner. I have only once known iodism produced, and that was in a little girl nearly three years old, who had been taking three grains of the iodide every six hours for about a fortnight. When there is marked contracture, faradisation of the non-contracted muscles will be found useful. (Dr. J. Abercrombie, p. 150.)

INFECTIOUS CEREBRO-SPINAL MENINGITIS.—*Its Diagnosis.*—Senator reports eight cases of this affection, and emphasizes the difficulty attending its diagnosis. The disease can be most easily confounded with typhoid fever, tetanus, and with other forms of meningitis cerebro-spinalis. But even in cases of cerebral hemorrhage into the meninges or ventricles, where decided stiffness of the neck is combined with spasm and contractures of the extremities, a confusion with cerebro-spinal meningitis may arise, especially as absence of the tendon reflexes is observed in severe cases of the latter affection. Acute rheumatic arthritis of the articulations of the vertebral column, narcotic poisons, and those producing spasm, uræmia, diabetic coma, and the nearly allied coma of other dyscrasic conditions, are also to be borne in mind in forming a diagnosis. The previous history of the disease in each case is of the greatest importance, since in other disorders the symptoms usually do not occur in the same order as in cerebro-spinal meningitis. At the height of the disease there are to be observed a stiffness of the neck, various eruptions of the skin—especially herpes, fever, and sweats which are not critical. The swellings of the joints, which develop later in the disease, are of diagnostic import. In one case it was observed that the diazo reaction was absent. This feature, if confirmed, would be of importance as distinguishing the disease from typhoid. (International Journal, July, p. 225.)

LOCOMOTOR ATAXY.—*The Early Signs of.*—Dr. Max Karger has published as a graduation dissertation in the University of Berlin an account of a number of observations made on 117 cases of locomotor ataxy in Professor Mendel's clinic, with the view of detecting the early symptoms of this disease; for, as he says, the great hope of a really rational and satisfactory method of treatment lies in the recognition of the existence of the disease in its earliest stages. The history given by the patients established a connection between syphilis and locomotor ataxy in 53 per cent. of the cases. In the earlier stages he found symptoms affecting sensation, lancinating pains, numbness, especially of the lower extremities, cord-like sensation round the waist, retardation of the rate of conduction of sensations, and, what he looks upon as especially important, being almost always present, the so-called Romberg's symptom—i.e., the inability or great difficulty of balancing the body when the feet are placed parallel and close together, the eyes being shut,—which, however, he does not consider is due to the ataxy, but thinks it is an abnormal condition of sensation. With regard to ophthalmic symptoms, he finds that at the commencement of locomotor ataxy there is a diminution in the acuteness of vision, and a concentric contraction of the field, amblyopia and amaurosis, which were due in 35 per cent. of the cases to atrophy of the optic nerve. Then there were slight and transitory paralyses of the eye muscles. Insensibility of the pupil to light was found in 66 per cent. of the cases, and was due sometimes to a paralysed condition of the sphincter, and sometimes to disturbances of reflex action. With reference to the patellar reflex, the author thinks it has been considered to be absent rather too universally. He found it in eight of his 117 cases. The bladder reflex was often diminished, so that chronic vesical disease, the cause of which is not to be made out, ought to lead a medical man to think of tabes. Impotence was much more common than any increased sexual reflex. Very rarely gastric and cephalic "crises" and joint affections were noted. The author suggests that complaints of a vague nature, such as nervous pains, eye or bladder troubles, should lead the physician to make a thorough examination with special reference to the want of patellar reflex, Romberg's symptom, and the want of reaction of the pupil, as these objective signs do not necessarily give rise to any subjective symptoms. (Dr. Max Karger, *Lancet*, August 20th, p. 380.)

OPHTHALMOPLÉGIA EXTERNA WITHOUT OTHER SYMPTOMS.—At the Ophthalmological Society, on March 10th, 1887, Dr. C. E. Beevor showed a case of Ophthalmoplegia Externa without other symptoms. It was that of a woman aged forty, who had rheumatic fever six years ago, after which the right eye suddenly turned outwards, but it was doubtful whether the left eye was

affected. The patient did not know that her eyes were fixed till told so. The up-and-down movements are weak, but there is almost complete paralysis of the lateral movements. There is a considerable degree of ptosis, probably due to the consensual movement of looking, which is very deficient. The pupils are equal, and react to light and accommodation; convergence is lost. The optic discs are normal. There was no history of syphilis, and no evidence of tabes, but some improvement has followed treatment with iodide of potassium. (Lancet, March 19, p. 576.)

PARALYSIS FROM CHRONIC ARSENICAL POISONING.—Drs. Cushing and Prince reported to the Suffolk (America) District Medical Society a case of this nature. The circumstances of the case need not be further alluded to here than to state that the poison was presumably administered intentionally in small repeated doses by those in charge of the patient. Arsenic was detected in the vomit and in the urine. The patient was at one time almost completely paralysed from head to foot, only a few movements being left, and these painful and difficult. There was more or less complete loss of the sense of touch over all four extremities. Sense of pain was increased over some parts, but it was retarded. Loss of faradaic excitability was found in all the muscles of the legs, fore-arms, and hands. The triceps of the right arm responded feebly; the biceps well on each side. Faradaic excitability of the ulnar and median nerves was lost on both sides. To the galvanic current there was well-marked reaction of degeneration in all the muscles of the right fore-arm and hand, and the same was found in the extensors of the left fore-arm; the examination was not pursued further on account of the pain it produced. It was pointed out that the case closely simulated one of alcoholic paralysis, for which it might have been mistaken but for the discovery of the arsenic, which it appeared had probably been administered in some jelly. The mental faculties of the patient were unimpaired. Recovery took place. (Practitioner, Aug., p. 131.)

PARALYSIS OF THE THIRD NERVE OF ATAXIC ORIGIN.—*Its Diagnosis.*—It is well known that ocular paralyses are frequent premonitory symptoms of locomotor ataxy; but the points of difference between such a paralysis and one due to an affection of the nerve-trunk are not sufficiently recognised. The object of the writer in this paper is to show that in most instances paralysis of tabetic origin can be distinguished from that due to other causes; and, as it is often a very early symptom, it may afford a very important aid to prognosis. There may be a complete absence of all other tabetic symptoms, yet, if the paralysis presents the characters to be presently described, the onset of tabes may be predicted. Paralysis due to nerve lesion almost

always affects all the branches of the nerve, although, of course, there are exceptions to this. The paralysis, on the other hand, of tabetic origin affects only a few of the branches, or even a single one. Out of sixty-two cases in which paralysis of the third nerve had preceded the onset of locomotor ataxy, the author only found one in which the paralysis was total. In the large majority of the cases the pupil is affected either alone or conjointly with other muscles. In syphilitic paralysis, on the other hand, we never see the paralysis limited to the pupil, and it generally affects the whole distribution of the nerve. The paralysis due to locomotor ataxy is of central origin, and affects the nuclei of individual fibres. The affection of the pupils, moreover, is peculiar. Contractility to light is lost, but they still contract when the eyes fix a near object; this may be associated either with mydriasis or with myosis (the latter being known as the "Argyll-Robertson" pupil). The author considers that in a case of paralysis of the third nerve, the fact of the retention of the "accommodative action" of the pupil is insufficient by itself to exclude tabes as the cause of the paralysis. In locomotor ataxy, myosis, alone or associated with affections of other muscles, is exceedingly common. The author also attributes considerable importance to the fact that the tabetic paralysis is very transient, for while syphilitic paralysis usually persists for months, it is not uncommon for the tabetic to pass off in a few weeks, or sometimes even in a few days. The subjects of ataxy, moreover, not unfrequently complain of transient diplopia lasting only a few seconds (which we should ourselves have been inclined to consider rather in the light of a loss of muscular association than of a paralytic nature). Although, however, the fact of the paralysis being transient proves it (in the writer's opinion) to be tabetic, the fact of its being persistent does not exclude tabes. A relapse in the case of a syphilitic paralysis is, of course, not impossible, but is exceedingly rare. In tabetic cases, on the contrary, relapses are common. Syphilitic cases rarely, if ever, recover without treatment, and are always obstinate; in the tabetic cases, on the other hand, spontaneous recovery is common, and it occurs rapidly, sometimes quite suddenly. (M. Fournier, *Medical Record*, July, p. 306.)

PARA-MYOCLONUS MULTIPLEX.—Dr. Helsingfors has described a case of this unfamiliar affection. It occurred in a man, aged 45, whose father was an inveterate toper. The disease began at the age of sixteen, one year after the patient had had an attack of malarial fever. A convulsive attack, apparently caused by a severe fright, was attended with loss of consciousness. The day afterwards his thighs were the seat of involuntary shocks, often followed by movements in the thighs, later in the arms, and rarely in the face. Ever since that time the shocks had con-

tinued, varying a little in frequency and intensity, without, however, disappearing for a long time together, and of late they had increased in frequency and intensity. Movement, emotions, and fatigue increased the movements. Small doses of brandy lessened the shocks, but inebriety might lead to a convulsive seizure and to augmentation of the chronic affection. His general health is said to have continued good all through, and he has never had any pains. Contractions of the facial muscles were observed, especially about the mouth. The chief muscles affected in the arms were the long supinator, biceps, triceps, deltoid, and carpal extensors. The shock extended throughout the whole muscle, and was often followed by a corresponding movement. The muscular contractions were often isolated; sometimes an irregular series of arrhythmical contractions were to be observed in the same muscle. The intensity and frequency of repetition of the contractions were rather variable; a common interval was fifteen to twenty seconds. The contractions might be symmetrical without necessarily being isochronous. The movements did not interfere with the manual movements; he could write without trouble. Similar kinds of movements were noted in the muscles of the thigh. Attempts to evoke the ankle clonus were very efficient in calling forth movements in the thigh muscles. The diaphragm, as well as the face, was the seat of the spasms. The case differs from those recorded by Friedreich, Lowenfeld, Remak, and Marie in the last-mentioned facts, and, as in Seeligmüller's case, voluntary movements favoured the occurrence of the involuntary contractions. The knee-jerks were exaggerated in most cases, but diminished in the one now mentioned. (Dr. Helsingfors, *Lancet*, March 26, p. 641.)

RECURRENT CRAMP DUE TO PLUGGED ARTERY.—Professor Charcot showed at the Salpêtrière a patient, M. N., a man of 45, who complained of cramp and lameness in the right leg. He had suffered in 1884 from loss of sight in the left eye, due to thrombosis of the central artery of the retina; there was a marked arcus senilis and other signs of degenerate arterial coats. In 1885 he had found that he could not walk for more than five minutes without getting pain in the right foot and calf, followed by cramp. After a few minutes' rest this got better, and he could go on again for a few minutes, but again was stopped in the same way. The right foot and leg were noticed to be much congested, of a venous tint, and this could be increased by pressure on the femoral artery and vein in Scarpa's triangle. The leg was cold, and there was some loss of feeling in the great toe. This recurrent cramp was first noticed by Bouley in 1831; and M. Charcot has described it before in *Mémoires de la Soc. de Biol.*, 1859, and traced it to obliteration of the right common iliac artery, where the collateral blood supply was insufficient, a cause

which was demonstrated post-mortem. Stenson's famous experiments, published in 1667, showed what happened to the lower limbs when the aorta was tied, and were essentially of the same nature. More modern observers had shown that when the arterial supply of the lower limbs is cut off, although the blood supply of the spinal cord remains complete, yet the legs become paralysed; then the skin becomes anæsthetic; and finally in about two hours a muscular contraction, the *rigor mortis*, sets in. If the ligature were immediately removed, the *rigor mortis* would pass off and the limb recover; but after a little while this is impossible, and it passes on to gangrene. In the patient M. N., M. Charcot diagnosed arterial obliteration with collateral blood supply sufficient for very slight muscular action; when that was used up there followed the pain, and then the cramp, which was really a foretaste of the *rigor mortis*. Unless care were taken, gangrene might ensue. That was the important practical lesson, for the condition was little known and little considered, and he had seen limbs lost by such inattention. In this case he ordered M. N. never to walk long enough to bring on this cramp; and after four months he found him so much improved as to be able to walk at least a quarter of an hour, and he felt little doubt now that he had saved him from an amputation for gangrene. (Prof. Charcot, Practitioner, Nov., p. 366.)

PERIPHERAL NEURITIS IN CHRONIC RHEUMATISM.—About a year ago the wide inquiries of MM. Pitres and Vaillard into the pathology of peripheral neuritis led them to examine two cases of chronic rheumatism in which they found some evidence of peripheral change. They have since then given careful attention to another case, which they report, along with their two previous cases, in very full detail. In brief, the chief points are these:—*Case 1.*—A man, æt. 50, who had had rheumatism since the age of twenty-eight; some osseous ankyloses, ichthyotic desquamation, muscular atrophy, dystrophy of nails. Post-mortem examination showed slight thickening in the spinal cord of the columns of Türck and Goll, normal nerve roots, and considerable atrophy and degeneration of the trunks and peripheral branches of the nerves in the leg, which were alone examined. *Case 2.*—A woman, æt. 76, who had had rheumatism about fourteen years, with wasting of interossei, dystrophy of skin and nails. Post-mortem: the spinal cord and the trunks of the nerves were found healthy, but there was atrophy and degeneration of some peripheral branches, especially those near the atrophied muscles. *Case 3.*—A man, æt. 49, with history of seven years of rheumatism; fingers all turned outwards and stiff, dystrophy of nails and ichthyotic skin, no muscular atrophy. After a long examination the spinal cord was found healthy, and the nerve trunks generally; but some cutaneous and ar-

ticular branches were degenerating or atrophied. MM. Pitres and Vaillard draw the conclusion that peripheral nerves will very often be found degenerate in chronic rheumatism, but that their degeneration cannot be considered to play the first part in the articular lesions, for those nerves may be found quite healthy which supply the joints that are severely diseased. That the nervous change may be related to the atrophy and may be the cause of some pain they think probable, but it cannot be denied that similar changes occur sometimes in tuberculosis, enteric fever, and tabes, which give rise to no symptoms. (Practitioner, Oct., p. 288.)

SCIATICA.—*Massage in.*—Prof. Max Müller advocates the methodical use of massage in sciatica. (Deut. medinis. Wochenschrift, 1886.) Of a group of fifteen patients of varying ages, he succeeded admirably in all by this treatment. All of them were severe cases, having intense pain and considerable disorder of motility. Massage was applied in the ordinary way, the patient lying on the healthy side. The first *séances* were painful, but the irritability of the nerves rapidly subsided, and after a few treatments no pain was caused by it and permanent relief was obtained. (International Journal, July, p. 223.)

TUBERCULAR MENINGITIS.—*An alleged New Symptom of.*—The existence of a small circle on the iris close to the pupillary border, which it completely surrounds, is the new symptom to which Dr. Skeer has drawn the attention of the Pathological Society of Chicago. When this circle commences to appear it is more or less indistinct, and resembles a whitish ribbon of somewhat transparent aspect, whose inner margin is extended almost to a level with the free border of the iris. At the end of from twelve to thirty-six hours the whole border of the iris is invaded, and has taken on a blanched tint of irregular and granular aspect. These changes, which commence simultaneously in the two eyes, are more apparent in irides of a brown colour, and they may disappear sometimes with great rapidity (so that it is necessary to examine the eyes every day), and give way to yellow-brownish rings, which increase in size as the pupil dilates. Dr. Skeer believes the changes to be tuberculous in nature and pathognomonic of tubercular meningitis. (Lancet, Sept. 10, p. 535.)

Tubercular Meningitis.—*Iodoform Ointment in.*—Dr. Martel calls attention to some cases of tubercular meningitis which were all cured by Dr. Warfwinge, a Swedish physician, by means of an ointment composed of iodoform and vaseline (1 to 5). This was rubbed into the shaven scalp, twice a day, five grammes of the ointment being used each time, and a cap of some impermeable material worn constantly. The time required for cure

varied, in the five cases in which this treatment was tried, from nine to thirty-two days. Dr. Martel remarks that the fact of five patients having been all cured is quite sufficient to recommend this method. "The future will tell us what it is really worth, and instead of remaining passive in presence of this disease, hitherto considered incurable, which has claimed such a multitude of victims, especially in Paris, it is the physician's imperative duty to make trial of every method of treatment which experiment, observation, and clinical experience places within his power." This treatment was first proposed and employed by Dr. Emil Nilsson, a Swedish physician, who used an iodoform ointment of the strength of 1 to 10. A short account of a case in which it proved successful appeared in this Journal for November 21, 1885. (British Med. Journal, Oct. 16, p. 733.)

AFFECTIONS OF THE CIRCULATORY SYSTEM.

ARTERIAL TENSION.—"*Virtual Tension.*"—While the prime cause of high tension in the pulse is obstruction in the peripheral circulation, the actual pressure in the arteries is maintained by the heart. Usually the increased difficulty in driving on the blood is met and counteracted by increase of the contractile energy of the heart; but it is clearly possible that while there is obstruction in the arterioles and capillaries the heart may not rise to the occasion. We shall then have, in feeling the pulse, an artery full between the beats and capable of being rolled under the finger, while at the same time it is compressible. This is, in fact, very common, and we require a term which may be applied to such a condition. I have been in the habit of speaking of it as virtual tension. Now, as the artery allows itself to be flattened, the pulse wave which lifts it into the cylindrical form appears to be sudden, and the pressure, after lasting a certain time, seems to drop suddenly. The artery may be small or large, and the pulse varies accordingly. We meet with the conditions which give rise to virtual tension at the two extremes of kidney disease. At the outset of acute renal dropsy, while there is obstruction in the arterioles and capillaries, the heart is rendered weak by the pyrexia and low diet, and there is more or less tendency to it throughout the attack. Again, as the heart becomes worn out in the course of chronic granular disease of the kidney, it ceases to be capable of maintaining the high tension which is characteristic of this disease, and virtual tension takes its place. It is at this period that reduplication of the first sound is so well marked. The same course of events is observed after protracted high tension from whatever cause; and as this is the origin of dilated left ventricle, the pulse of virtual tension, in its best marked form, comes to be the charac-

teristic pulse of dilatation of the heart. At the same time that it is expanding the left ventricle, the continued obstruction in the arterioles and capillaries is overcoming the contractile power of the medium-sized arteries, the lumen of which becomes enlarged, while their coats are thickened. (Dr. Broadbent's Croonian Lectures, pp. 160-167.)

Arterial Tension.—Prognostic Value of High Arterial Tension in Renal Disease.—In connection with the subject of renal disease and gout and high pulse tension, I must find an opportunity for calling attention to the fact that cases are met with in which the tension is altogether absent, and this not because the heart is weak or failing, but because there is even less than the normal resistance in the arterioles and capillaries. The prognosis when such is the case is extremely unfavourable. It is in connection with the chronic, large, white kidney that we most commonly see a weak, soft, low-tension pulse with albuminuria. The amount of albumen is often very great; it varies from day to day, often without traceable cause, but often, again, it is increased by exertion or mental depression, or constipation, and it is usually greater at night than in the morning. Any development of tension in the pulse is attended with diminution of the albumen. The patient may not have the least appearance of kidney disease, and dropsy may be entirely absent. Tension, again, may fail to supervene in acute albuminuria, and when such is the case, a fatal result is, according to my experience, always to be expected. I have come, indeed, to take the development of high arterial tension as one of the chief guides in prognosticating the course and issue of this affection; if it makes its appearance early, and becomes well marked, the prognosis is favourable; there appears to be an increased liability to uræmic convulsions, but the patients bear the treatment required by this and other complications, and usually recover. If the tension is slowly developed, and especially if it is fitful and inconstant, the recovery is slow and uncertain, while, as has been said before, if the pulse remains soft, short, and weak throughout, the prognosis is bad. Dropsy is usually considerable, and there is often an unusual amount of blood in the urine, as well as casts. In contracted granular disease of the kidney absence of tension is very rare, and I have no record of a well-marked instance in which the diagnosis has been verified post-mortem. [A case is quoted to illustrate the position that absence of arterial tension, where such tension is part of the disease, is not a favourable sign. The patient had not the look of kidney disease; he was well nourished and had a good colour; the heart gave no evidence of disease, and the arteries were soft and flexible; the high tension which predisposes to rupture of cerebral arteries was absent; there was nothing, in fact, suggestive

of impending danger.] (Dr. Broadbent's Croonian Lectures, *Lancet*, April 2, p. 664.)

DISTENSION OF THE TRANSVERSE NASAL VEIN IN CHILDREN.

One of the most striking physiognomical peculiarities of a large number of children—especially the feeble offspring of the poorer classes in large towns—is the black distended vein at the root of the nose. This vein—the nasal arch—forms a transverse communication between the angular veins on either side. To a less extent, the other superficial veins in connection are more prominent than in a healthy subject, but the nasal arch is pre-eminently distended; on the other hand, in hydrocephalus the most distended surface veins are those over the forehead, and there are the other signs of that condition. On investigation, these children will be found to have a neglected or intractable chronic catarrh of the nose and pharynx, often with swollen middle turbinated bodies and rhinorrhœa, and are generally in a low state of health; and on further examination chronic congestion or hypertrophy of post-nasal mucosa, or post-nasal vegetations will be found. The treatment which I have adopted is to ascertain if post-nasal vegetations be present. If so, I remove the obstructing tissue with the finger-nail, or, if necessary, with the post-nasal forceps. If there is merely general thickening of the mucosa of the post-nasal space, free distension of it with the finger, followed by scraping with the nail (especially in the region of the sphenopalatine foramina), so as to cause some local blood-letting, will generally be followed by return of the nasal arch to a normal inconspicuous condition in a few days, with disappearance of rhinorrhœa, diminution in size of middle turbinated bodies, and complete relief of noseache and drowsiness. It is well to follow up the little operation with daily applications of some astringent pigmentum to the post-nasal space. Occasionally the operation has to be repeated. In addition to these local measures, I enjoin hygienic rules as to exercise, fresh air, good diet, and avoidance of causes of catarrh, and prescribe syrupus ferri iodidi. But these alone, without the local measures as above described, are quite impotent to restore the affected parts to health. (Dr. Scanes Spicer, *British Med. Journal*, Aug. 27, p. 459.)

NITRO-GLYCERINE IN DISEASES OF THE HEART AND KIDNEYS.

—Holst has recorded (*St. Petersburg Med. Woch.*) the results of his experience of the use of nitro-glycerine in heart and kidney diseases. Nitro-glycerine, he says, is capable of powerfully strengthening the innervation of the heart. One can rely on this effect with security only when there is no organic disease of the heart or great vessels; where there is degeneration of the heart or great vessels—e.g., in old valve diseases—the remedy

fails. In all cases of cardiac weakness in which the heart-muscle and the valves were sound, the beneficial effect was prompt and unfailing. Nitro-glycerine is, therefore, likely to be of great service where there is imminent danger to life from cardiac weakness—e.g., in typhus and in pneumonia. Nitro-glycerine was found useful by Holst, as by other observers, in angina pectoris. As regards its value in kidney disease, a surprising increase of urine flow was observed in several cases, and in one case a rapid disappearance of uræmic symptoms followed the use of the remedy; these effects must be regarded as secondary, and dependent on regulation of the activity of the heart. In all the cases where dropsical accumulations disappeared under the use of nitro-glycerine, there was cardiac weakness. The chief difficulties in using this drug are its poisonous properties, and the inequality of the preparations and of the individual susceptibility to the drug. The best preparation to use is a 1 per cent. solution, three drops being administered daily. If this dose proves too weak, it should be increased drop by drop. Six drops was the maximum dose employed, and the state of the pulse was kept under constant observation. (Dr. Leech's Report in Medical Chronicle, Sept., p. 470.)

PAROXYSMAL CARDIAC DYSPNŒA.—*Treatment.*—In all cases the diet should be restricted to milk, meat, and a small amount of bread; sugars and starches should be avoided and the quantity of food taken at any one time should be limited. Flannel should be worn next the skin, and the surface of the body should never become chilled. Each day should be divided into eight hours for sleep, eight hours for labour, and eight hours for rest and refreshment, and this division should be strictly adhered to. In other words, the entire life of the individual should be carefully regulated. Next to diet, the most important thing is systematic daily exercise in the open air; the exercise should never be violent or carried to fatigue; commencing in a moderate way, it should be daily increased until the individual is able to take long walks without fatigue, avoiding elevations and going up stairs. The medical treatment resolves itself into alkalies as eliminatives; the different preparations of iron as tonics, in combination with which small doses of digitalis should be given, 5 or 10 drops of the tincture twice a day. In alcoholic subjects strychnine should be combined with the iron. All of these drugs should be given in such small doses that their use may be continued for a long time. The first thing in the management of a paroxysm is to give the patient plenty of fresh air, the second is to keep him in a semi-recumbent posture, the third to apply artificial heat to the surface of the body. The only two medicinal agents which I have found to have any positive control over a paroxysm are the nitrite of amyl and nitro-glycerine. After one paroxysm

has occurred, nitro-glycerine should be given whenever the premonitory symptoms of an attack are present. During a paroxysm, nitrite of amyl carefully administered will give at least temporary relief. I have patients who carry pearls of the nitrite of amyl constantly with them, which they use to ward off impending attacks. (Dr. A. L. Loomis, p. 172.)

PERFORATION OF FEMORAL ARTERY AND VEIN FROM SUPPURATING BUBO.—At the Medical Society on March 8th, 1887, Mr. Marmaduke Sheild read a case of Perforation of the Femoral Artery and Vein that occurred in a man, aged 22, a porter, admitted into Westminster Hospital under the care of Mr. Macnamara. The patient had a chancroid on the penis, phimosis, and a suppurating bubo in the groin, which was opened and profuse and offensive discharge let out. Counter-openings and stimulants were employed, but the suppuration extended. When the case came under Mr. Sheild's care, on Feb. 9th, 1887, the soft parts in the groin were much involved. The sinuses were slit up. One sinus passed behind and internal to the femoral vessels, leading into a cavity. The cavity was sponged out, and then bleeding commenced, slow and venous at first, arterial afterwards. The cavity was laid freely open and compression practised at the groin. Digital compression was successfully tried for a time. Davy's lever was employed to control the hemorrhage, and both vessels were exposed and the ulceration explored. A hole the size of a crowquill was found in the femoral artery, or a part of the vessel near the trunk of the artery. The artery was tied once by itself and a second time with the vein lower down. The patient was much exhausted, and collapsed. Notwithstanding every attention, the patient remained very ill with pyrexia and rigors, and died a few days after the operation of ligature. At the partial inspection after death the head of the femur was found to be displaced towards the obturator foramen. The ligatured vessels were removed, and the specimen was shown to the Society. The vein between the ligatures was in a sloughy state. The superficial femoral artery was obliterated by firm clot. The author reviewed the literature of these rare cases. (Lancet, March 12, p. 526.)

PERNICIOUS ANÆMIA AND BOTHRIOCEPHALUS LATUS.—It may be remembered that last year Professor Runeberg advanced the view that "pernicious anæmia"—in some cases at least—was dependent on the presence of the intestinal tapeworm—*Bothriocephalus latus*. His contention was supported by Dr. Reyhen and others, but strongly opposed by such notable authorities upon the disease as Professors Biermer, Quincke, and Immermann. A case which tends to support Runeberg's views has been recorded by Dr. Schapiro (in "Wratsch," cited

Centralbl. f. Bacteriolg.). A lad, thirteen years of age, came under treatment for intense anæmia of a progressive type, characterised by great diminution of red corpuscles (viz., to one-sixth of normal) and of hæmoglobin, with liability to cutaneous hæmorrhæge, epistaxis, &c., marked cardio-vascular bruits, pyrexia, and without any emaciation. It was not until the administration of anthelmintics had resulted in the evacuation of a large quantity of segments of bothriocephalus (to such an amount that several worms were probably present) that he began to regain strength and colour. His recovery from that date was rapid. The writer attributed the anæmia to the disintegrating action on blood-corpuscles of some chemical product of the parasite which was absorbed into the blood. (Lancet, Oct. 8, p. 724.)

SPARTEINE, A HEART STIMULANT.—Langgaard reports the following formulæ, which he found useful in eighteen cases of heart diseases: *R.* Spartëin. sulph., gr. 6; pulv. rad. liquirit., succ. liquiritæ, āā q. s. *Ft. pil.* 20 in num. *Sig.* One or two pills from two to four times daily.—Also *R.* Spartëin. sulph., gr. 3 to gr. 7; aq. destill., \mathfrak{z} $2\frac{1}{2}$. *Solve.* *Sig.* Twenty drops, from two to four times daily, in sweetened water or wine.—Or, *R.* Spartëin. sulph., gr. 3 to gr. 7; syr. aurant. cort., \mathfrak{z} $12\frac{1}{2}$. *Solve.* *Sig.* A small teaspoonful in water, from two to four times daily. (Medical News, Aug. 6, p. 149.)

STROPHANTHUS.—Looking to the therapeutical actions of strophanthus, I have found it a valuable cardiac tonic and strengthener of the heart-muscle in cases of typhoid fever with enfeebled first sound and tendency to cardiac failure. This is by far the best thing that strophanthus can accomplish; and the increment of the first sound both in length and volume, and increase of the radial pulse, was distinctly perceptible both to finger, ear, and sphygmograph, within fifteen minutes of taking the remedy. This clinical observation is interesting in relation to the paper read at the Dublin Meeting of the British Medical Association by Dr. Wild, of the Owens College, Manchester. That observer, testing the effect of different drugs on the contraction of muscle just removed from the body, proved by experiment that strophanthus causes marked contraction of the muscular fibre in ten minutes, a contraction which arrives at its maximum in fifteen minutes. It is important to find two observers arriving at similar conclusions, one at the bedside and the other in the pharmacological laboratory; in fact, the dose of strophanthus proper in each case can best be gauged by watching the effect upon the pulse or upon the heart's action. In œdema of the legs, the result of cardiac obstruction, great diminution of the swelling is obtained; and in cardiac obstruction generally great assistance is given to the labouring heart. In fatty hearts cardiac action

is steadied and irregularity is diminished, but no permanent good is accomplished. Finally strophanthus is in no respect a stimulant, but a pure cardiac tonic. It does not lose its effects by the system becoming habituated to it; on the contrary, its action from first to last is uniform. Contrary to digitalis it does not accumulate in the system, nor, while increasing cardiac muscular impulse, at the same time accentuate vascular muscular resistance, but acts upon the heart only. It encourages the action of the kidneys. In anæmia with weak heart, or anæmic murmur of the heart, it strengthens cardiac action and accelerates the action of the iron. (Dr. F. J. B. Quinlan, *British Medical Journal*, Aug. 27, p. 452.)

TABETIC ANGINA PECTORIS.—It is well known that, in the long and tedious course of the affection termed *tabes dorsalis*, the functions of various viscera may show certain derangements constituting the “visceral crises” of authors. These functional derangements have been somewhat fully treated of in recent medical writings, but those of the heart—the “cardiac crises”—have not engaged so much attention, and as yet the literature pertaining to them is meagre and unsatisfactory. A report of four cases, by Leyden, in the “*Centralblatt für klinische Medicin*,” may therefore be looked upon as a noteworthy contribution to the data at our disposal. In those cases the attacks bore a close resemblance to those of *angina pectoris*, and they were considered by the author as examples of neuralgia affecting the vagi nerves. Like the other sensory disturbances incident to *tabes*, they varied widely in intensity and duration, but some of them were severe enough to be alarming and to threaten life. That they were well-marked examples of *angina pectoris* is shown by the sense of oppression and severe pain in the precordial region, the pain radiating to the left shoulder and sometimes extending down the arm, the feeling of anxiety and sense of impending death, the difficulty of breathing, and the coldness and clamminess of the surface. (Editor *New York Medical Journal*, July 30, p. 130.)

THE PRE-SYSTOLIC MURMUR.—At the Glasgow Medico-Chirurgical Society, on April 1st, 1887, Dr. D. C. M’Vail read a paper, dealing with the loud, rough, thrilling murmur that precedes and runs up to the first sound. A short historical account was given of the views entertained by different physicians with regard to the causation and significance of the murmur. The paper argued that this, the loudest and strongest by far of all cardiac murmurs, could not possibly be caused by the *auricular* contraction, but must necessarily be owing to *ventricular* contraction. The author of the paper held that there is always, when the ventricle under normal conditions contracts, a regur-

gitation of blood into the auricle—a regurgitation prior to, and ending with, the complete closure of the auriculo-ventricular valves. This “physiological regurgitation” is necessarily of considerable amount, and is under normal circumstances accomplished without audible sound. But under certain abnormal conditions it becomes audible, and often loudly so. The conditions requisite for this are those that give rise to “fluid veins” of backward direction at the auriculo-ventricular orifice. These conditions are three in number:—(1) There must be blood in the auricle; (2) this auricular blood must be under some degree of tension at the instant when the ventricle begins to contract; and (3) the ventricle must force a stream of blood *into* the mass of the auricular blood. The friction between this *core* stream and the enveloping and—for the moment—practically stationary auricular mass of blood gives rise to the murmur. When the heart is quite normal there is no audible murmur, because the regurgitant or *core* blood from the ventricle finds in the auricle either no blood or an amount of blood quite insufficient to develop audible frictional vibrations. But when there is stenosis of the auriculo-ventricular valve, of sufficient amount to prevent anything like complete emptying of the auricular cavity prior to the beginning of the ventricular systole, then there is blood in the auricle sufficient to develop audible vibration by friction with the regurgitant ventricular blood. There is not in all cases of auriculo-ventricular stenosis nor at all times an audible murmur; this is due to one or other of two circumstances:—(1) The auricle for the time being is, notwithstanding the stenosis, able to empty itself to such degree as to leave within itself a quantity of blood insufficient for audible frictional vibration with the regurgitant blood; or, (2) the auricular wall is so flaccid and dilatable at the beginning of the ventricular contraction that the regurgitant blood easily finds room for itself in the auricle by pushing before it—*en masse* as it were—the auricular blood; the regurgitant blood not requiring to *penetrate into* the mass of auricular blood. The auricular blood is not under such degree of tension as to resist sufficiently the stream of regurgitant blood, so that a fluid vein could take place within it. In this way the author accounted for pathological specimens that he exhibited of great mitral stenosis where, although under careful observation for weeks prior to death, no murmur running up to the first sound had been heard. He altogether objected to the murmur being named *pre-systolic*, as Gendrin, in 1841, had named it, or *auriculo-systolic*, as Gairdner had called it in 1861. It is altogether *ventriculo-systolic*—differing from the murmur at present known as mitral ventriculo-systolic only in that it *precedes* the acme of mitral valve closure. In practice it is, as every one knows,

frequently *continuous* with the murmur ordinarily designated mitral regurgitation—the regurgitation *after* the acme of mitral valve apposition. Were the murmur really *auriculo-systolic*, then it could not possibly without interval be continuous with the murmur that is universally admitted to be *ventriculo-systolic*—an interval during reversal of blood currents there would necessarily be, quite appreciable to the ear—which easily recognizes an interval so short as the $\frac{1}{100}$ th of a second. The author held that all intra-cardiac murmurs are due to “fluid veins,” it being impossible that any valve or cord, or membranous or muscular projection into the heart’s cavity, could, in a fluid so dense as blood, vibrate with sufficient freedom and rapidity to give rise to audible sounds. In the course of the paper, frequent reference was made to the views and writings, particularly of Gairdner, Barclay, Flint, and Balfour. (Glasgow Medical Journal, Sept., p. 224.)

The Pre-systolic Murmur.—Dr. M’Vail was followed by Dr. Gairdner, who reiterated, in the most convincing manner, his well-known views upon the mechanism of the murmur, concluding with these words:—But in any case the whole of his clinical experience led him without any reserve to affirm the murmur of regurgitation (V. S.) to be one thing; and the murmur of obstruction (A. S.) in the auriculo-ventricular orifices to be another and a quite distinct thing. So much, he thought, had been made clear beyond dispute, upon the basis of clinical observations repeated in many places by many different men, although there were not wanting even recently published textbooks in which the matter was considerably muddled up. But to admit, on the basis of an unproved hypothesis, the conclusions to which Dr. M’Vail had come to-night, would be the bringing back of chaos. In dealing with this subject, accordingly, it was necessary to subordinate theoretical considerations to facts which were capable of demonstration, and of the utmost importance in diagnosis. (Glasgow Medical Journal, Sept., p. 229.)

THE PULSE.—*How to Observe it.*—We are now prepared to estimate the strength of the pulse. Three fingers are placed on the vessel, as is supposed to be the case from first to last. With that nearest the heart, pressure is made till the wave is arrested, so as not to be felt by the other fingers, or, if necessary, two fingers are employed to extinguish the pulsation. In this way, by the degree of pressure required, and by varying the pressure with one, two, or all three fingers, an idea is obtained of the force with which the heart is propelling the blood onwards. Account will have been taken already of the size of the vessel, and the method of noting the tension will have brought out other points which enter into consideration. I have spoken of

the manœuvre of rolling the vessel transversely under the fingers as a means of estimating the pressure and tension by which it is maintained in the cylindrical form. Another manœuvre by which the state of the coats of the artery is ascertained is to carry the skin along it longitudinally, with varying pressure; curves in its course and bulging in its walls are thus detected; inequalities of thickness and density in the coats are felt, sometimes mere thickening and hardening, at others actual patches of rigidity and calcareous deposit; or the entire vessel may be found to have a thick, leathery, inelastic feel, or may be converted into an irregular, hard, calcareous tube, or may feel like a string of beads under the finger. One more question of observation must be taken up—the recognition of dicrotism. For this purpose the fingers must rest as lightly as possible on the vessel, and uniform gentle pressure must then be made by all three. The dicrotic wave, when well within physiological limits of variation, will be felt like an echo of the principal beat, and when well marked is extremely distinct. A complete account of the pulse then should specify (1) the frequency—that is, the number of beats per minute, with a note of any irregularity or intermission or instability of the rhythm; (2) the size of the vessel; (3) the degree of distension of the artery between the beats; (4) the character of the pulsation, whether its access is sudden or gradual, its duration short or long, its subsidence abrupt or slow, note being taken of dicrotism when present; (5) the force or strength of both the constant and variable pressure within the artery, as measured by its compressibility; (6) the state of the arterial walls. How far the description of the pulse usually given, even in cases in which much turns upon it, falls short of these requirements it is unnecessary to state. (Dr. Broadbent, *Lancet*, March 26, p. 610.)

THE SPHYGMOGRAPH.—*Its Clinical Value.*—The sphygmograph has been invaluable in research; it has given precision to our ideas, and, in the hands of Marey and others, has made clear and comprehensible many intricate and doubtful problems of the circulation. It is capable, too, of rendering important aid in clinical investigation, especially where demonstration and records of changes in the circulation are required. To me personally the sphygmograph has been of immense service. I worked with it under the eye of Sibson, and shared Anstie's enthusiasm with regard to it when he and Professor Burdon Sanderson took up the instrument with which Marey endowed medical science. It is not, therefore, from ignorance of or want of familiarity with the sphygmograph that I have come to the conclusion that it is not specially useful in practice—that in any form known to me it is not a clinical instrument for every-day work. It is rarely necessary for diagnosis, and scarcely ever to

be trusted in prognosis. The indications obtained from it are not, like those of the thermometer, independent of the observer. Skill and practice are required in applying it, judgment is called for in determining the position and pressure which give the best trace, and indeed, in deciding which of the traces obtainable is the best representative of the particular pulse; the personal equation of the observer, therefore, comes in and if any special result is greatly desired, an enthusiastic investigator can obtain it, and may, without the least conscious intention, twist facts in the required direction. It is necessary, also, before a trace can be interpreted with any degree of confidence, to know what form of sphygmograph has been employed. Marey's is still, in my opinion, the best, and his traces appear to me to correspond most closely with traces taken without instrumental multiplication and magnified by the lens. English modifications of Marey's sphygmograph often magnify the pulsation too much, and in doing so, introduce exaggerations due to the rapid movement of the writing lever. Ponds' and Dudgeon's instruments are extremely handy and convenient, but a gratuitous provision for exaggerations and for extraneous jerks and vibrations exists in the loose and unmechanical way in which the motion of the intermediate lever is communicated to the writing lever and in the weight which acts as counterpoise in the last-named lever. (Dr. Broadbent's Croonian Lectures, *Lancet*, March 26, p. 609.)

THORACIC ANEURISM.—*Treatment by Iodide of Potassium.*—As recumbency reduces the heart's pulsations from six to more beats per minute, it is always advantageous and often necessary to begin the treatment of aneurism by putting the patient to bed. The patient's pulse must then be counted daily at the same time for several days, so as to ascertain his normal pulse-rate when recumbent. Next we prescribe the iodide, in ten-grain doses every eight hours. The pulse-rate is noted for several days subsequently; if it remains unaffected, the dose of the iodide is increased to fifteen grains every eight hours; and should the pulse-rate still remain unaltered, the dose may be still further increased. It is unusual, however, for more than fifteen grains to be given with advantage, and it is more usual to find it impossible to give more than ten grains every eight hours without raising the pulse-rate. The proper dose, once ascertained, must be steadily continued till the desired effect is secured. Marked improvement is generally observed in three months, sometimes in less. If the case is got early enough the cure is practically complete; but even when treatment is delayed till the aneurism has attained a large size, the relief is usually remarkable, and it is obtained without risk. The action of the iodide is to dilate the arterioles, and thus lower the blood-pressure over the whole body, the force of the heart being at the

same time slightly diminished. The result of this lowering of the blood-tension is that the aneurism is no longer actively dilated with each pulsation, and the walls of the sac behave like a hollow muscle opposed to an obstacle with which it can successfully cope, and become slowly hypertrophied, the sac itself at the same time gradually diminishing in size. That the walls of the sac may hypertrophy, it is of importance that the blood-tension should not be too much lowered, and for this reason the pulse-rate requires to be closely watched at the commencement of the treatment, as a rise in the pulse-rate is the only available indication of an injurious lowering of the blood-tension. As the iodides not only lower the blood-pressure, but also remove the albuminates from the blood, there is no need to starve the patient. If we do so we unduly lower the blood-pressure, impoverish the blood, and render a curative hypertrophy of the walls of the sac more or less impossible. The superadding of "Tufnell's plan" to the treatment by iodide of potassium is, therefore, no improvement, but the reverse: and though just at first we must be a little careful in dieting our patient, because recumbency and repletion are liable to induce gastric attacks, yet it is needful to feed the patient well during the iodide treatment, otherwise good results are not so surely obtained. It is always necessary for an aneurismal patient to be a total abstainer from all alcoholic drinks, both during treatment and ever after. (Dr. George W. Balfour, Edinburgh, British Med. Journal, June 4, p. 1241.)

Thoracic Aneurism.—Paroxysmal Dyspnœa of.—There are two measures which I think may be spoken of more favourably. One is blood-letting. The good effects of this I witnessed many years ago, as I am reminded by notes of the case. It was one of identically the same character, proved to be so post mortem; a free venesection was resorted to, and it brought speedy and great relief. It is a suggestive fact that in many cases of aortic aneurism a copious hæmoptysis, when it has not *per se* caused death, has been attended with marked improvement of the breathing. Nor has the benefit of venesection in the treatment of aortic aneurism in general been altogether unrecognised by writers on the subject; but, as a resource in these particular emergencies, it would seem almost to have escaped notice. Its *modus operandi* is sufficiently clear; it relieves congestion, diminishing, perhaps, the local swelling of the mucous membrane; it relaxes spasm; and it reduces arterial pressure, temporary increase of which, as we have before observed, may have a share in the causation of these disturbances; while, in reference to more radical treatment, we know that it tends to promote coagulation in the aneurysmal sac. Tracheotomy being contra-indicated, let us suppose that, looking at the patient all round,

there is reason to hesitate in the employment of blood-letting; have we anything else to fall back on? A very limited experience would lead me to suggest the hypodermic administration of atropine in dose sufficient to produce mydriasis (℥iii to ℥iv of the solution of the sulphate of atropine). In a case of appalling severity a year or two ago, this proceeding yielded me most satisfactory results. Unfortunately, I had not the opportunity of following up this case to its termination: but the suffocative dyspnoea, coupled with the intense tracheal stridor and other physical signs present, could leave no doubt whatever as to its nature. I do not venture upon any explanation of the mode of operation, but so striking was the relief afforded in this instance that, under similar circumstances, I should certainly have recourse to hypodermic atropine again. (Dr. Goodridge, British Med. Journal, June 4, p. 1207.)

AFFECTIONS OF THE RESPIRATORY SYSTEM.

A COLD.—*How to Treat it.*—I have adopted with the greatest satisfaction for several years the following plan. At the very outset of the attack I give the following mixture:—℞. Liq. morphinæ acet. ℥ 30; liq. ammon. acet. ℥ vj; spir. chloroform. ℥ j; aq. camph. ad ℥vj., misce. A tablespoonful to be taken in the forenoon and afternoon, and two tablespoonfuls at bedtime. If there be an irritable dry cough, I give in addition one drop of ipecacuanha wine in a teaspoonful of water every five or six minutes for four or five times in the day if necessary. Two days of this treatment destroys most colds, and the cure is confirmed by a grain of quinine taken dry on the tongue in the forenoon of the two or three days following. (Dr. Leonard Sedgwick, British Med. Journal, May 28, p. 1160.)

AN ASTRINGENT GARGLE.—In employing an astringent for a gargle, an admirable method employed by our seniors was, instead of using pure tannic acid, to introduce a native astringent substance known to contain the acid. As an example of this form, Dr. Allen gives a prescription known in Philadelphia as “Goddard’s gargle,” as first introduced by Dr. Paul B. Goddard, and frequently prescribed by the late Dr. Francis Gurney Smith. It is as follows: ℞. Aluminis, ℥ii; cort. granati, ℥ss; petal. rosæ rub., ℥i; mellis, ℥i; aquæ bull., ℥vi. M. The mixture can be used without dilution, or with an equal quantity of water. It appears to present all the features required by an astringent wash to the throat. If increased strength is demanded, it is better to direct an agent to be employed topically by the attending physician. (*Some Old-time Prescriptions*, Therapeutic Gazette, Sept., p. 618.)

ASTHMA.—*The Nature of its Mechanism.*—I consider asthma to be a disorder of vascular irritability; that the paroxysm is directly due to a partial occlusion or cylindrical narrowing of the lumen of the bronchi through the swelling of the bronchial mucous membrane; and that this swelling is caused by a vasomotor spasm of the arterioles with a saturation of the tissues by the liquor sanguinis; this condition is accompanied by a general high blood-pressure. With this theory we find a complete explanation of all the physical signs of asthma. We see the possibility of the rapid changes of physical signs observed during the paroxysms, and we have in its support the physiological action of all the drugs which experience proves to be of value in allaying the paroxysm—the nitrite of amyl, morphia, chloral, lobelia, and iodide of potash in their action allay the spasm at the same time that they tend to reduce general blood pressure; whilst drugs like the bromides prove of little value in breaking the paroxysms when once in force, although they are serviceable in preventing a recurrence. (Dr. W. C. Glasgow, p. 182.)

Asthma.—*A Fuming Inhalation for.*—Sir James Sawyer states that for many years he has prescribed various fuming inhalations as a means of relief in the dyspnoea of bronchial asthma, and as a result of his experience he has constructed the following powder for an “Asthmatic powder”:—Potass. nitrat., ℥ss ; pulv. anisi. fruct., ℥ss ; pulv. stramonii fol., ℥j . A thimbleful of this powder, placed on a plate, is pinched into a conical shape, and lighted at the top. It burns with a smouldering flame, like a pastille, and is held near the patient, who inhales the smoke. This method of treatment is only palliative in the paroxysms; for the reduction of the frequency and severity of the attacks many other resources are available, in the direction of dietetic, climatic, hygienic, and medicinal therapeutics. (Medical Record, July, p. 295.)


Spasmodic Asthma.—*Hyoscyamine in.*—The object of this communication is to call attention to the action of hyoscyamine in this affection, and indeed in the treatment of spasm of involuntary muscular fibre, wherever existent—whether in the bronchi or hollow viscera (stomach, bowels, bladder). Given in the dose of half a milligramme ($\frac{1}{130}$ gr.), according to the urgency of the case, every half-hour or hour, until the spasm disappears, it is rare for the patient to be unrelieved after two or three doses; in cases of great urgency the first dose may be in the form of a hypodermic injection for quicker absorption. When relief is afforded, it may be given less frequently (two or three times a day), and gradually left off. I have never been disappointed with its action; it relieves the spasm promptly and efficiently, and the patient has no dread of an immediate recurrence of the

dyspnœa. A young woman who is subject to occasional attacks of asthma came to me on June 7th, and was quite relieved in twenty-four hours. She did not, however, continue the remedy at longer intervals for some days, as she should have done, and so had a recurrence three weeks later. She was, however, quite cured after four or five days' treatment, and has since remained well. Her previous attacks occurred in March, 1887, May, 1886, and December, 1885, when the same treatment was equally, and as quickly, successful; so that the intervals of immunity vary from three to ten months. I usually give with the hyoscyamine small doses of strychnine (the arseniate or sulphate), in half-milligramme doses, as a tonic, and to counteract the tendency to adynamy. (Mr. Benjamin Walker, Spondon, Derby, Lancet, Aug. 20, p. 368.)

Spasmodic Asthma.—Use of the Nitrites in.—I have not obtained any facts that would justify the preference of any one of the nitrites because it possesses therapeutic advantages over the others in the treatment of asthma or bronchitis. There are, however, conveniences of administration which lead me to give a preference to nitrite of sodium and to nitro-glycerine. They are both extremely stable, and they can readily be given in solution, either by the stomach or by subcutaneous injection. These advantages are not possessed by nitrite of amyl and nitrite of ethyl, and even the latter substance in the alcoholic solution of the *spiritus ætheris nitrosi* of the Pharmacopœia is notoriously a very uncertain preparation. It is probable that the favour with which this preparation is, notwithstanding, regarded, is due not only to the action on the circulation which it shares with the other nitrites, but also to its previously unrecognised influence on dyspnœa, which is no doubt exerted when it is administered, as it so frequently is, in the treatment of bronchial catarrh. When the volatile nitrites are given by inhalation, the effects are only of brief duration, but when they are given by the stomach the effects are similar in their relatively prolonged duration to those of the non-volatile nitrites. Nitrite of amyl, nitrite of ethyl, nitrite of sodium, and nitro-glycerine have each proved successful in my observations in relieving the dyspnœa of asthma and bronchitis. I believe they do so by removing bronchial spasm, and the remarkable power which they possess in doing this will probably lead to their being more largely used than they hitherto have been in the treatment of disease. Where their administration is successful in removing the auscultatory evidences of such spasm, it is difficult to imagine anything more convincing of the beneficial influence that can be exerted upon the conditions of disease by pharmacological agents. The observer has presented to him a patient in whose thorax a continuous succession of varying

sounds is heard. Within a few minutes after a nitrite has been administered, the endless succession of noisy breath accompaniments gives place to an almost complete silence, in which only the subdued quiet of normal respiration is heard, and at the same time, what to us is of even greater interest and importance, the distress of dyspnœa, or, it may be, the intense suffering and anxiety of orthopnœa, is entirely removed. (Professor T. R. Fraser, p. 189.)

CHEYNE-STOKES RESPIRATION.—*State of the Pupil in.*—[At the Glasgow Medico-Chirurgical Society, on April 1st, 1887, Dr. Finlayson read a communication in which the following passage occurs:] What I wish to call attention to is quite another alteration in the pupils, to which I have not found any very distinct reference in the observations of others—viz., *rhythmical contraction and dilatation with each individual breath* in the full deep series of respirations, the pupil dilating with the inspiration and contracting with the expiration. The first case which called my attention to this peculiarity was not a case of Cheyne-Stokes respiration at all. It was one of stertorous breathing in prolonged coma, occurring in a dropsical girl with uræmic convulsions. It was associated possibly with some slight cerebral lesion also, as there was partial temporary hemiplegia after she regained consciousness. In her case, during the full, deep, stertorous respirations, the pupils contracted and dilated in a regular manner, each inspiration being associated with an enlargement, and each expiration with a contraction of the pupil. The phenomenon was so striking as to lead me to watch the next few cases of Cheyne-Stokes breathing, and in several cases a similar rhythmical alternation in the size of the pupil was seen in the period of full, deep respirations. One of the most striking was in the case of a child who died very early in the course of a tubercular meningitis, as ascertained by post-mortem examination. In his case, the rhythm of the Cheyne-Stokes respiration was perfect, and the period of apnœa so marked as to suggest several times the idea of his being actually dead till the ascending series of respirations again set in. In various other cases of Cheyne-Stokes respiration in the adult, occurring in its most typical form, I have witnessed the rhythmical changes with each respiration, although in some cases it has been absent and in some subjects the pupillary changes of any kind are slight. I do not think I can give the post-mortem changes in these cases of Cheyne-Stokes respiration, as some of them were only seen in consultation or incidentally, but I may say that they presented the clinical features with which, in my experience, Cheyne-Stokes respiration is most often associated—viz., a combination of cardiac and renal symptoms. (Dr. James Finlayson, Glasgow Medical Journal, Sept., p. 222.)

EMPYÆMA.—*Excision of Ribs in.*—I never have a rib excised unless the case is an old standing one, or there is no room to put in a large drainage-tube; and as a part of the outcome of the experience I have attempted to condense, I interfere with the pleura as little as possible, and for as short a time as possible. Therefore I never wash out the chest, and I attempt to do away with the drainage-tube at the earliest possible period. A free incision is made in the chest wherever is most convenient, pus having been previously proved to exist at the selected spot by the exploring syringe. A large sized tube is put into the opening perhaps 5 or 6 inches long. This is shortened within a few days, and if all goes well after a week or ten days, the length may have been reduced to an inch or so, just enough in fact to go between the ribs and no more. The external opening should be kept open long enough to insure that there is no re-collection going on inside. The last case I have had has been treated by a silver tube I had made on the principle I advocate, of keeping the external wound open and leaving the pleura alone. It is a flattened oval  an inch long, with a bore of 4 millimètres by 12. It has a thin metal shield which can be moulded somewhat to the side of the chest. It answered admirably, keeping the ribs apart and giving a free vent, and this in a case not very favourable to success, for the child was only two years old. The case was operated upon by my colleague Mr. Symonds; the tube was removed on the fifteenth day, the wound healed up forthwith and the child has since then remained well. In conclusion, let me say that I have not intended to make any objection to the removal of ribs in properly selected cases, and such I take to be very long-standing cases, or when, which according to our experience is I think not very common, the ribs come so close together that a properly large tube cannot be inserted, or is nipped between them. But it is my belief that in the present day resection of ribs is a common operation, and becoming yet more so. Whereas I think it is quite unnecessary for the great majority of cases. (Dr. J. F. Goodhart, p. 258.)

HAY FEVER.—*Local Treatment.*—For the strictly local treatment there are required a common laryngeal brush and a carbolic mixture. This mixture is composed of glycerine of carbolic acid one ounce, hydro-chlorate of quinine one drachm, and a 1000th part of perchloride of mercury. Heat will be required in order to dissolve the whole of the quinine, for without heat Mr. Martindale informs me that the glycerine of carbolic acid will dissolve only half the quantity prescribed. Let me now describe the method of procedure to be followed in applying the carbolic acid mixture to the mucous membrane of the nasal cavities. If there is much mucus in the nostrils, cleanse them by means of a douche of warm water containing boroglyceride,

in the proportion of an ounce to the pint. Dip the laryngeal brush in the carbolic acid mixture, and see that the brush is full but not overflowing. Place the left hand on the left side of the forehead, and the thumb on the tip of the nose, with the shank of the brush between the thumb and two forefingers of the right hand, and the brush itself directed upwards, push it gently but firmly into one of the nostrils, carry it as high as you can without inflicting injury, move it about so as to bring the mixture in contact with as much as possible of the interior of the upper part of the nostril, and then withdraw it. With another brush filled with the carbolic acid mixture, or with the same brush washed, dried, and replenished, you complete in the manner following the two operations required for each nostril. Having the left hand in the position already described, and the right hand holding the laryngeal brush, with the hair pencil directed forward from the body of the operator, push the brush along the floor of the nostril into the pharynx, and after insuring free contact with the adjacent parts, withdraw it. If during the operation the brush is over-full, some of the carbolic mixture will fall into the throat and excite coughing or some other discomfort. When you have thus finished the treatment of one nostril, and carefully removed any of the carbolic acid mixture which may have been spilt upon the nose or lips, you will proceed to treat the second nostril in exactly the same manner as you have dealt with the first. (Sir Andrew Clark, p. 184.)

HEMOPTYSIS.—*Atropine in.*—Dr. Haussmann prescribes subcutaneous injections of atropine as a last resource in cases of serious hemoptysis. He cites three cases in which this remedy produced excellent results. The first was that of a patient who had serious hemoptysis twelve times in six days; three milligrammes of sulphate of atropine were injected; there was no recurrence of hemoptysis. The same result was obtained in the second patient, in whose case the administration of turpentine preparations and injections of ergotin had produced no improvement. In the third case a patient suffering from repeated hemoptysis was cured by two subcutaneous injections of three milligrammes of sulphate of atropine. (British Medical Journal, Sept. 3, p. 521.)

HOOPING COUGH.—*Carbolic Inhalation for.*—In the Deutsche Med. Wochenschrift, Dr. R. Pick, of Koblenz, published several cases which seem to show that the inhalation of concentrated carbolic acid solutions has a powerful curative action in whooping cough. Dr. Kniazolucki, of Zofia's Hospital, in Lvov, in Galicia (Wiadomosis Lekarskie), accordingly tried the same method in a severe case of his own occurring in a weak, emaciated, feeble girl, aged 9. The affection had lasted for about four weeks, and,

the paroxysms occurred about twenty-eight times a day. The inhalations of carbolic acid, either pure or diluted with an equal amount of distilled water, were repeated hourly, the administration being continued for ten minutes on each occasion. The number of paroxysms during the subsequent days fell to 20, 19, 12, 12, 6, respectively, and from the sixth day of the treatment the patient had not a single attack. The temperature became normal on the third day. After ten days' stay in the hospital the girl was discharged quite well. No poisonous symptoms were observed either in this case or in those related by Dr. Pick. Equally satisfactory results were obtained by Dr. W. Jakobski, of Odessa, who used a 50 per cent. solution of the acid, the inhalations being carried out for ten minutes every two hours. In one of his cases the daily number of paroxysms fell rapidly from thirty-two to six. Dr. Jakobski differs from Pick and Kniaziolucki only as regards the details of the method. They principally employ a mask resembling that used for giving chloroform; this is placed over the patient's nose and mouth. Dr. Jakobski, on the other hand, finding that this apparatus frightened children, and led them to resist the application, devised an instrument like a toy, consisting of a pasteboard tube with gold paper gummed over it, and fitted with a handle. Within the tube are two thread nets, and between them a layer of Bruns's cotton-wool, which is moistened with the carbolic solution. Jakobski found that with this there was no difficulty in getting the little patients to take the inhalations. (British Medical Journal, April 30, p. 950.)

Whooping Cough.—*Cannabis Indica* and *Belladonna* in.—The following formula has been a favourite one with Vetlesen:—℞. Ext. cannabis indicæ, grs. xv.; ext. belladonnæ, grs. viiss.; alcohol absolute, glycerin, āā ʒ iss. In the following doses: Children aged from 8 months to 1 year, 4 to 5 drops; 1 year to 2 years, 5 to 8 drops; 2 years to 4 years, 8 to 12 drops; 4 years to 8 years, 10 to 13 drops; 8 years to 12 years, 12 to 15 drops; over 12 years, 15 to 20 drops. One hundred and sixteen cases were treated, of which eighty-three did well; of these, thirty made most brilliant recoveries. No evil after-effects were observed in any case. (Therapeutic Gazette, Jan., p. 47.)

INTUBATION OF THE LARYNX.—The following summary of the present status of intubation is published by Dr. E. Fletcher Ingals, in a recent number of the New York Medical Journal:—
1. Intubation may be quickly and easily performed, and with but little danger. 2. Friends readily consent to the procedure. 3. There is no necessity of tedious after-treatment, as the tube is kept clear by the respiratory efforts. 4. The results so far are practically as good as those of tracheotomy at all ages, and ap-

parently better in very young children. 5. To secure the best results, great care must be taken to prevent the entrance of foreign substances into the trachea. 6. At present, with O'Dwyer's tubes, the most successful plan is to absolutely prohibit the deglutition of fluids while the tube remains in the larynx. Small bits of ice may be sucked to allay thirst; soft solids may be swallowed, and fluids may, if necessary, be supplied by enemata, or the tube may be removed to feed the patient, and then be re-introduced. 7. Tubes with smaller heads, designed to rest on the vocal cords, have not yet been used sufficiently often to enable us to speak positively about them. If experience proves that they do not often slip into the trachea, and that they do not injure the vocal cords, they will be especially useful, for they will nearly overcome the difficulty in deglutition, and patients wearing them may eat and drink at pleasure, excepting when paralysis or some other result of the disease prevents closure of the epiglottis. 8. Medical treatment should be carefully attended to after intubation, and we must spare no effort to prevent extension of the disease to the bronchial tubes, or to relieve the dyspnoea which it occasions. Dr. Ingals apprehends that successful after-treatment depends largely upon the judicious and timely use of suitable expectorants and respiratory and cardiac stimulants. 9. Though short tubes may be used with good results in some cases, the danger of their becoming filled with pseudo-membrane is so great as to render long tubes preferable. 10. Intubation may and should be practised early, and it does not preclude subsequent tracheotomy. 11. For serious cases of spasmodic croup, and for œdema of the glottis, this will prove a most useful procedure. 12. For the treatment of chronic laryngeal stenosis this method will, doubtless be of value. (Therapeutic Gazette, Aug. 15, p. 551.)

IODOL.—*Its use in Throat Affections.*—I have used iodol in a number of cases of laryngeal phthisis, with very beneficial results. Adopting Lublinski's method I have applied it as an insufflation of the pure powder, in some cases once daily, in others three times a week. Ulcerations in the inter-arytenoid region have cleansed and healed up completely, and the characteristic arytenoid œdema has diminished under its influence. Tuberculous ulcerations of the epiglottis and pharynx have benefited by it and been arrested, and the distressing pains on deglutition which accompany this condition are much relieved by iodol. In some patients, in whom solid food was entirely interdicted by reason of the pain on swallowing, deglutition has become comparatively easy, under daily laryngeal insufflations of iodol. If the iodol is carefully and accurately applied over the ulcerations it will completely heal them. I have cases now under treatment in which there was originally extensive

laryngeal ulceration, but in which now all active mischief is arrested. Iodol remarkably diminishes the cough of this condition. It is not to be supposed, of course, that insufflations of iodol, or of any other substance, will cure extensive phthisical disease of the larynx, but they will certainly arrest ulceration, relieve pain and cough, and allow the patient comparative comfort. The iodol remains for a long time in contact with an ulcerated surface. Sprays of chloride of zinc (gr. xxx ad ʒi) have in some cases been combined with the iodol treatment. For ozæna, I find that iodol tampons are effective in arresting the foul smell of nasal caries, or for the true ozænic conditions independent of carious bone. (Dr. Norris Wolfenden, p. 205.)

LARYNGEAL PHTHISIS.—In the case of laryngeal tubercular disease, it is to surgery, intra- or extra-laryngeal, that we must look for successful treatment. By being the first to remove tubercular tumours of the larynx, Schnitzler may be considered the pioneer of this method of treating tubercular disease. The operation of tracheotomy, or of laryngo-tracheotomy, not as a palliative but as a directly curative agent, is that to which attention is now more particularly directed. By opening the windpipe two advantages are gained—(a) the larynx is put into a condition of comparative rest and freedom from irritation; (b) direct access may be afforded to the diseased areas, and the operations of scraping, excising, or otherwise removing the tubercular tissues are immensely facilitated. This doctrine may be said to be one of the two *r's*—*rest* and *'radication*. In cases where the lung affection is absent, quiescent, or small in degree, and in which the laryngeal disease resists the application of the usual remedies, there ought to be no hesitation in resorting to surgical measures, even before symptoms of stenosis have developed. Regarding climate, little need be added. The principles which should guide us in the selection of a residence are precisely those which have been already advanced in regard to medical and surgical treatment proper. The atmosphere ought to be as unirritating as possible, and hence residence at high altitudes is clearly contraindicated. (Dr. Hunter Mackenzie, British Med. Journal, Aug. 27, p. 459.)

PACHYDERMIA LARYNGIS.—In a characteristically able article by Professor Virchow, published in the Berliner klinische Wochenschrift for August 8th, much light is thrown upon the condition heretofore described as “papilloma” of the larynx, in a description of the microscopical appearance which the author believes to be present in the disease. The subject was suggested by the much-discussed case of the Crown Prince of Germany, the progress of which, under the care of Dr. Morell Mackenzie, seems thus far to have confirmed Virchow's favourable prognosis.

Virchow objects to the name papilloma as being applicable to several forms of new growths, and therefore inaccurate. The description of pachydermia he thus sums up: In a certain restricted area of the larynx, under irritation, two kinds of proliferation may occur, resembling chronic inflammation. By one of them a warty growth, which he calls pachydermia verrucosa, is produced; by the other a diffuse swelling, which attacks the whole superficies. They resemble the warts and diffuse hypertrophies often caused by irritation of the external integument. The distinction between a simple papillary wart and a malignant papillary growth lies in the absence of epithelial elements in the former and their presence in the latter. Every trace of epithelium in the connective tissue is suspicious, while growths in which the normal demarcation exists at the base of the epithelial layer Virchow considers benign. The disease is cancerous when spaces filled with epithelial masses are found beneath the boundary-line of epithelium. In order to make a diagnosis, the base of the tumour must be examined. When this is found to be normal, the growth is, and will continue to be, benign; when, however, spaces filled with epithelium are found beneath the normal demarcation at the base, the growth is malignant. Although recurrences of the benign form of papillary growth are not uncommon, the prognosis as to ultimate recovery after removal is good, and it is not impossible that spontaneous disappearance may sometimes occur. The present writer has known of several instances in which this result has seemed to take place, one of which is not unworthy of mention. A boy, observed by a number of laryngologists for several years at a prominent throat clinic in New York, was originally presented by his mother as affording to the students a remarkably good illustration of the so-called papilloma of the larynx. Although the growth was of such size as almost to fill the larynx, and the mother was forewarned as to its danger, she persistently refused to allow of its removal; its presence was a source of revenue to her so long as she could extort a fee for its demonstration to the class. Contrary to all expectation, the boy continued to live, and finally returned on one of his annual visits with the tumour reduced to such a vestige of its former dimensions as to make it useless for exhibition. Both mother and son stoutly denied that any treatment had meanwhile been received. The value of Professor Virchow's observations will readily be appreciated, especially as bearing upon cases of laryngeal disease in which the question of laryngectomy may arise. In such cases an early diagnosis is of vital importance, for determining both the necessity of the operation and its extent, partial removal of the larynx being far less undesirable than its total removal. As to the correctness of his views, it need only be remembered that he

has advanced more new ideas in pathological anatomy, with a smaller proportion of errors, than any man living. Such being the case, the outlook for the Crown Prince is, to say the least, hopeful. (Editorial: New York Med. Journal, Sept. 3, p. 271.)

PHTHISIS.—*Treatment by Gaseous Enemata (Bergeon's Method).*

—Drs. F. C. Shattuck and H. Jackson publish detailed records of seven cases treated by this method, and conclude their paper as follows:—The number of our cases is small, but we think ourselves justified in drawing the following conclusions:—1. Toxic symptoms may follow the injection of sulphuretted hydrogen gas into the rectum, among such symptoms being nausea, vomiting, general depression or collapse, diarrhoea, and headache. 2. Strong artificial solutions of sulphuretted hydrogen mixed with carbonic acid, and injected into the rectum, are apt to cause abdominal discomfort; the risk of this is diminished by warming the solution of the former gas. 3. This method is in no sense a specific for phthisis. If useful, it is only an auxiliary to older and generally accepted methods. 4. The only benefit which we saw in our cases that can fairly be attributed to the enemata, was diminution in the amount of the expectoration. To these conclusions we should like to add two impressions: 1. Recorded experience seems to show that there is considerable difference in different individuals—and perhaps in the same individual at different times—in the amount of sulphuretted hydrogen which can be safely injected into the rectum. *A priori* reasoning makes it almost incredible that the amount of the gas which can be passed through the lungs when Bergeon's method is strictly followed, is large enough to have any therapeutic value. 2. The good effects which have unquestionably followed the treatment on this side of the water, as well as in France, are, perhaps, largely attributable to the stimulus afforded by a novel method of treatment, which is of such a nature that the patient cannot but feel that not only something, but much is being done for him. (Medical News, July 2, p. 10.)

[See also papers on this subject by Dr. Solis-Cohen, Dr. E. T. Bruen, and Drs. William Pepper and Crozier Griffith, at pages 193, 196, and 199 of this volume of *The Retrospect*.]

PNEUMONIA.—*Injurious Effects of Quinine in.*—At a recent discussion in the New York Academy of Medicine there was a general consensus of opinion upon the inability of quinine as an antipyretic in the treatment of acute pneumonia (Boston Medical and Surgical Journal, March 3rd). The subject was introduced by Dr. J. H. Ripley, who related his experience of the administration of the drug in large doses in cases where the temperature exceeded 103°. In two cases no reduction of temperature occurred; in two there was a slight rise in the temperature.

The reduction that it did usually produce never lasted for more than from two to four hours. Not only, then, was quinine to be regarded as feeble and uncertain in antipyretic effect, but it was harmful from disturbing the digestive functions and producing cardiac and nervous depression. In one case opisthotonos was noticed; in many epistaxis; in one marked albuminuria with renal casts. Nor did it shorten the natural course of the disease. Dr. Fruitnight's experience coincided with that of Dr. Ripley; but he prescribed it for its tonic effect in small doses. Dr. Castle found that, if given in antipyretic doses, it must be at the expense of the nutrition of the patient, and during the last five years he had almost entirely abandoned the remedy in pneumonia. Dr. Billington, to obviate gastric disturbance, had given the drug in the form of a suppository. He also had been disappointed in its use as an antipyretic in pneumonia. Dr. Emmett Holt had given as much as sixteen to thirty grains a day to children from one to one and a half years old in cases of pneumonia, and felt that as an antipyretic it was useless in small doses and dangerous in large. Far better results were obtained from the cold pack. He had now discarded the drug in acute pneumonia, but found it of marked advantage in convalescence. Dr. A. Jacobi, the President, remarked on the changes in opinion with respect to quinine; he had himself always prescribed from six to twelve grains to children, usually in full dose in two instalments in the morning when the remission occurred. He thought the condition of the stomach in the febrile state accounted for some of the intolerance mentioned, and preferred hypodermic injection of the carbamide. Dr. Ripley, in reply, said that in a large number of cases the quinine had been given hypodermically in the form of strong solution of the muriate; but Dr. Jacobi remarked that it was not safe to use too concentrated a solution for hypodermic injection, and mentioned a case in point. (*Lancet*, March 26, p. 637.)

PULMONARY CAVITIES.—*Surgical Treatment of.*—Mr. Rickman J. Godlee concludes a series of lectures on this subject with the following propositions:—1. Gangrenous cavities should always be sought, and, if possible, opened; and the prognosis, if the operation be successful, is not bad. 2. The same may be said in regard to abscesses caused by the rupture of purulent collections from other parts into the lung, at least as regards the pulmonary complication. 3. Abscesses connected with foreign bodies must be opened, and if the body be not found, it must be remembered that, if of any considerable size, it probably lies pretty near the middle line. If possible, these cases should be treated early by tracheotomy and incision. 4. Bronchiectatic cavities, when single (a very rare condition), will be cured by operation. When multiple (a very common condition), they offer but small chance

of relief by our present surgical methods. Still, for the reasons stated, an attempt may be made to open the main one if such is to be found, but only if the pleura has been ascertained to be adherent. 5. Tubercular cavities should only be opened in cases where the cough is harassing and the cavity single. Injections may be used to relieve symptoms, but cannot be expected to be curative. (Lancet, April 9, p. 718.)

THE PNEUMATIKON.—*A New Form of Respirator.*—The exceptional relapse into severely trying weather we are now experiencing renders the question of lung affections one of foremost importance in daily practice; and the accessibility of a simple and ready appliance, alike prophylactic and palliative, must at such a period prove a very acceptable boon to practitioners and patients alike. No little ingenuity has before now been expended on the construction of the respirator, the utility of which under such circumstances has been unanimously acknowledged for years; that known as Jefferies' variety being probably the most efficient yet devised. The Pneumatikon (devised by me, and made by Down Bros., St. Thomas's St., Borough) is based on the same, and presents the further utility of being not only a respirator, but also in addition an inhalator, purifying the air inhaled, destroying the noxious bacteria evolved in pulmonary disease, by dint of an antiseptic medium, and thus combining the advantages of Jefferies' respirator with that of Yeo's auro-nasal inhaler. No very complicated apparatus has been needed to effect this long-looked for desideratum. A piece of lint, saturated with an antiseptic solution, is placed between two gold gauze-wire parietes, and thus enables the patient, while enjoying the comfort attending the use of the ordinary respirator, to inhale air purified by passing through the medium of such antiseptic as his medical adviser may prefer. My own formula I may quote here, *exempli gratiâ*: R. Tincturæ iodi ætherealis, acidi carbolic, āā ʒij; thym. olei, ʒi; vini rectificati ad ʒi; guttæ xx nocte maneque inhalandæ. (Mr. Brindley James, British Med. Journal, April 30, p. 944.)

TRACHEOTOMY.—Drs. R. W. Lovett and John C. Munro, in the July number of the International Journal of the Medical Sciences, present an elaborate and detailed study of the results of Tracheotomy at the Boston City Hospital. They show that the results of operation in this series of cases are above the average, in spite of the predominance of bad cases. They show that young children are especially liable to have extension of the diphtheritic process to the bronchi and lungs; in fact, that the chances are three to one that if they die they will die of suffocation. That, at the hospital in Boston, tracheotomy is most fatal at those times when diphtheria is most fatal in the

whole city, and incidentally that the mortality per cent. from croup and diphtheria in the whole city vary by the month in unison. That cases with membrane in the pharynx at the time of operation are more likely to die than those where it is not present. That the mortality per cent. after tracheotomy rises steadily as the operation is done on the first, second, third, or fourth day of the difficult breathing. That nasal discharge, albuminuria, and enlargement of the cervical glands, are symptoms of less moment than the character of the discharge from the trachea tube, which is the most important index of the progress of a case, and that the recovery-rate varies nearly 50 per cent. between cases where the discharge is loose throughout and those where it is gummy at any time. (International Journal of Medical Science, July, p. 169.)

TUBERCULAR LARYNGITIS.—*A Simple Method of assisting Deglutition in.*—One of the most distressing symptoms accompanying laryngeal phthisis with ulceration of the epiglottis is the difficulty patients experience in swallowing. Especially is this the case in advanced conditions where the epiglottis is more or less completely destroyed. In such circumstances the swallowing of even a teaspoonful of water, or liquid of any kind, is all but impossible, from the violent cough that is excited in consequence of the passage of some of the fluid into the larynx and trachea. Such patients are generally tormented with a thirst which they cannot satisfy, and the painful efforts they make to get down a few drops of liquid, and the terrible spasms of coughing and pain thereby produced, are truly pitiable to observe. In the Lancet for July 2, 1887, Dr. R. Norris Wolfenden refers to a method of drinking large quantities of fluid with ease, even when the epiglottis has more than half disappeared from ulceration. The plan was suggested to him by a patient of his who informed him that thinking of how boys are in the habit of drinking water from a running brook, by lying down upon the bank, and putting the mouth to the water, determined him to adopt a similar position himself, and found, by making use of a piece of india-rubber tubing that, while lying stomach downwards, and with the feet higher than the rest of the body, and putting the piece of rubber tubing in the water, he was able to drink a large tumblerful without stopping and with the greatest ease and comfort, although in the ordinary position a teaspoonful of fluid was as much as he could manage to get down, and this was accomplished only at the cost of much pain and terrible paroxysms of coughing. The plan is simple enough, and Dr. Wolfenden recommends it as an excellent method for alleviating one of the most distressing symptoms in patients suffering from such laryngeal conditions. (Dr. R. N. Wolfenden, Therapeutic Gazette, Sept., p. 613.)

TUBERCULOSIS.—*Formulae for Acid Calcium Phosphate Solutions for the Treatment of Tuberculosis.*—Freund, of Vienna, publishes the following, as used by Kolischer. For *hypodermatic injections*. Calci phosphorici neutral., 5 parts; aquæ destill., 50 parts. Add phosphoric acid until a perfect solution results; filter; add acid. phosphor. dil., $\frac{6}{10}$ part; aq. destillat., q. s. ad. 100 parts. For *an escharotic effect upon tuberculous ulcers and indolent granulations*, the following is used: Calci. phosphorici neutral., 50 parts; aq. destillat., 500 parts. Add phosphoric acid until a perfect solution is obtained; filter; add acid. phosphor. dil., 60 parts; aq. destillat., q. s. ad 1000 parts. Gauze may be soaked in this fluid, and used in dressing tuberculous fistulæ and pockets. (Medical News, Aug. 13, p. 184.)

AFFECTIONS OF THE DIGESTIVE SYSTEM.

ANAL FISSURE AND HEMORRHOIDS.—*Treatment by Gradual Dilatation.*—In a short paper Dr. H. O. Walker, of Detroit, Mich., advocates the use of gradual, as distinguished from forcible, dilatations in all cases where the sphincter ani requires to be put at rest, for the more successful treatment of fissure, hemorrhoids, and allied conditions. Dr. Walker uses the finger, and afterwards an expanding speculum, accomplishing the amount of dilatation necessary in the course of from three to eight weeks. The following advantages are claimed for the method:—(1) It is almost painless, at least after the first two or three distensions. (2) It does not tear the parts; nor does it produce paresis, as occasionally occurs after forcible dilatation. (3) Neither does it leave cicatrices that are apt to produce stricture, as in the method of hypodermic injection or ligature of hemorrhoids. (New York Med. Journal, July 30, p. 129.)

CANCER OF THE STOMACH.—*Absence of Free Hydrochloric Acid in the Gastric Juice in.*—The diagnostic value of the absence of free hydrochloric acid in the gastric juice in cases of malignant disease of the stomach is discussed at some length in a recent paper by Dr. V. G. Nechaieff, of St. Petersburg. For the detection of free hydrochloric acid no less than thirteen different tests have been proposed. Of these he considers the following to be the most useful:—(1) A solution of tropeolin in water, as proposed by Edinger: this has of itself a yellow colour, but when brought into contact with a solution containing 0.01 per cent. of HCl. it becomes a dark cherry red. (2) Methyl violet becomes blue on the addition of 0.025 per cent. of HCl. (3) Congo paper shows a blue tinge on being immersed in a solution containing 0.025 per cent. of HCl. (4) A mixture of three drops of liquor ferri perchloridi with the same quantity of

carbolic acid in twenty cubic centimetres of water shows the presence of lactic acid or its salts by becoming yellow; but if free hydrochloric acid is also present the reagent becomes colourless. This is, therefore, an excellent test for free hydrochloric acid, when lactic acid or the lactates are present. Dr. Nechaieff advises that all these tests should be applied in each case. He found that in cases of carcinoma of the stomach, and apparently in carcinoma of the œsophagus, absence of free hydrochloric acid constituted the rule, and its presence the exception, and is disposed, therefore, to think that its absence affords a practically useful diagnostic sign in cases where cancer of the stomach or œsophagus is suspected. Thus, in seven cases of carcinoma of the pylorus, though 142 examinations were made, free hydrochloric acid was never found, though lactic acid invariably existed; and, again, in 105 examinations of four patients with carcinomatous stricture of the œsophagus no free hydrochloric acid could be detected. In a case of cancer of the rectum, however, the presence of free hydrochloric acid in the contents of the stomach was very distinct. (Dr. V. G. Nechaieff, *Lancet*, June 4, p. 1143.)

Cancer of the Stomach.—Examination of Gastric Juice for Presence of Hydrochloric Acid in Cases of.—Leube's method, which is considered the best, is to introduce into the stomach a hundred cubic centimetres of ice-water, and after waiting for ten minutes, introduce three times the above quantity of water at the ordinary temperature. The whole is then removed and tested for hydrochloric acid in the following way: Two test tubes are taken, and into each is placed fifty cubic centimetres of distilled water, coloured by a few drops of a two per cent. solution of gentian violet. Into one of the tubes a few drops of the liquid removed from the stomach is introduced. If the fluid contains even a minute trace of hydrochloric acid, there will be a change in the coloured solution from blue to red. If it is free from the acid, the liquor will remain blue. The procedure entails some trouble and annoyance to the patient, but if it is as valuable as is maintained, it is well worth a trial in doubtful cases. If, by proving the presence of hydrochloric we eliminate cancer, our patients will certainly gladly put up with the disagreeableness of the method. (*Canada Med. and Surgical Jour.*, March, p. 501.)

CATARRHAL JAUNDICE.—Treatment.—Dr. Gluzinski, writing in a Polish journal, states that in cases of catarrhal jaundice, he has found excellent results follow the treatment recommended by Krull—viz., the repeated injection into the bowel of large quantities of cold water. This increases the peristaltic action of the intestines, and removes any mechanical obstacle to the flow of bile. Again, as has been shown by Röhrig and Mosler, who in-

jected large quantities of cold water into dogs, the bile is thus rendered both more liquid and more abundant, so that it more easily overcomes any obstruction. At first water at 59° F. is injected into the bowel until the patient complains of a feeling of distension in the abdomen. He is then made to retain it as long as possible. Most patients manage to retain two litres for from a quarter to half-an-hour. The next day the enema is repeated, but with water about 4° higher. The temperature is again raised on each succeeding day, but when 72° have been reached, no further increase is made. The reason of the increase is that the repeated introduction of cold water is apt to irritate the mucous membrane of the bowel. Altogether, four or five enemata are sufficient to produce the desired effect. The increase of the biliary secretion may be judged of by the colour of the fæces. Of course, the diet is attended to, in order to prevent a recurrence of the affection. (Lancet, April 23, p. 842.)

CHRONIC INTUSSUSCEPTION.—This term is applied to invaginations that have persisted for more than one month. The anatomical form of the disease that is most apt to become chronic is the ileo-cæcal (60 per cent.); that which is least frequently met with in a chronic condition is the ileo-colic (10 per cent.). No form of intestinal obstruction is more difficult to diagnose, and none gives rise to more ambiguous or more varied symptoms. Out of fifty-five cases collected by Rafinesque only a few were suspected to be examples of intussusception, and no less than twenty-seven were the subjects of an absolutely incorrect diagnosis. The following are the main points in the diagnosis:—

1. Age. The great majority of the patients are children or young adults, and in such individuals other forms of chronic obstruction are comparatively uncommon.
2. Mode of onset. The symptoms may commence with a distinct attack of acute or subacute intussusception, and subsequently pass on into a chronic form. Unfortunately, in about 60 per cent. of the cases the onset of the disease is insidious, and the earliest symptoms are those probably ascribed to indigestion or slight colic.
3. The invagination tumour. This mass has been met with in about 50 per cent. of the chronic cases, but has been mistaken for a fæcal mass or for a new growth in not a few of the examples. When the tumour has reached the rectum, the diagnosis can seldom remain obscure, but this condition has only been observed in 32 per cent. of the cases.
4. Blood in the motions has been recorded in about half of the instances of the chronic form. As regards other symptoms, there is a colicky pain that is always intermittent, is often absent for a long period, and often slight. The vomiting is not pronounced, is very rarely indeed feculent, and was entirely absent in 50 per cent. of the collected cases. It may be induced in the earlier stages, and made worse in the

later stages, by food. The bowels may act with perfect regularity, and may respond readily to an aperient. As a rule they are irregular, with a tendency to diarrhoea, and less often to constipation. Meteorism is absent, the abdominal walls are flaccid, coils of bowel are often clearly seen in movement through the parietes, and the patient wastes and becomes anæmic and cachectic. The symptoms are those of stenosis of the bowel, and unless distinct guidance is afforded by the four cardinal features already detailed, the precise diagnosis of chronic intussusception is scarcely possible. (Mr. F. Treves, *Lancet*, Oct. 29, p. 851.)

DIARRHŒA.—*Cannabis Indica in.*—We have been in the habit of prescribing it in nearly all forms of diarrhoea with marked benefit, combined with medium doses of morphine. In summer diarrhoea the effects are very striking. There is no necessity to record cases, they are all very much alike; the great depression, the frequent watery stools, the vomiting, and the cramp-like pains are very quickly relieved, the appetite speedily returns, and by the following or third day the cases are practically well, except for some weakness and debility. The formula we generally use for an ordinary adult is:—℞. Tincturæ cannabis indicæ, ℥x; liquoris morphinæ, ℥v vel ℥x; spiritus ammoniæ aromatici, ℥xx; spiritus chloroformi, ℥xx; aquam ad ℥j. To be repeated every one, two, or three hours according to circumstances. Directions: *No food for several hours, but a little brandy and water.* We have not seen one case run on to a fatal issue under this treatment. (Drs. F. Bond and B. E. Edwards, *Rastrick, Practitioner*, July, p. 8.)

Diarrhœa in Children.—As the season of the year approaches in which diarrhœas are especially fatal in children, we feel it not improper to call the attention of our readers to a remedy which, though used by some practitioners, is, we think, still neglected by many of the profession. We refer to the phosphate of sodium. In the summer diarrhœas connected with a lack of digestive power, in which the stools are either clay-coloured or habitually greenish, phosphate of sodium often brings a favourable response when the ordinary remedies for diarrhoea seem to irritate rather than do good. In nursing children it may be given in the milk, 10 grains of it in each bottle, or it may be given after eating, dissolved in a little water. It should be administered always in repeated small doses and not in a single large dose. Where there is habitual constipation, with occasional attacks of diarrhoea, in young children, it is especially serviceable. It probably has some distinct specific action upon the glandular organs of the intestinal tract. Another treatment of diarrhoea to which we want to direct the reader's attention anew, is the use of the cold bath. Our own experience has convinced

us of the truth of the original affirmation of Dr. Comegys, of Cincinnati, that in the diarrhœas occurring in young children in intensely hot weather with more or less pronounced elevation of the bodily temperature, the cold bath will often suffice for a cure, and will often bring relief when all other measures fail. It should be given as often as the child's temperature rises; in rare cases once in every three hours. In other cases two or three times a day. The water should be of a temperature not above 80°, and the immersion should be sufficiently long to produce a distinct effect. Properly managed, these cold baths we think of inestimable value in the treatment of those forms of summer infantile diarrhœa which are the outcome of heat. (Therapeutic Gazette, July 15, p. 463.)

FLATULENT DYSPEPSIA.—*Treatment.*—Huchard recommends the following formulæ: Salicylate of bismuth, 2 parts; calcined magnesia, 2 parts; powdered willow charcoal, 3 parts; oil of anise, 1 part. Of this powder a small teaspoonful may be taken an hour or a half hour before a meal. When *gastralgia* is added to flatulent dyspepsia, he recommends the following: Syrup of peppermint, 250 parts; hydrochloric acid, 1 part; hydrochlorate of cocaine, $\frac{1}{10}$ part. Of which a small glass (such as those in which liqueurs are served) may be taken after a meal. (Medical News, July 9, p. 42.)

GASTRALGIA.—*Treatment.*—Of all the directly therapeutic results in medicine with which I am acquainted, one of the most demonstrable is that which can be produced by the suitable exhibition of arsenious acid in uncomplicated gastralgia. I give 1-24th of a grain of arsenious acid, made into a pill with 2 grains of extract of gentian, thrice daily, between meals. The use of this remedy must be continued for a few weeks. In a case of moderate severity no other medicinal treatment is necessary. The gastralgic pains become less frequent and less severe, and recovery is steadily and surely attained. In severer cases I use some form of counter-irritation to the epigastrium, and I usually employ a rubefacient liniment of ammonia. In the severest cases vesication by a fly-blister is of service, and the blistered surface should be kept raw for some days by means of a daily dressing of savin ointment. But you must not rely upon treatment by drugs alone. Every hygienic adjuvant which tends to raise the strength of the patient is of high value in the cure of gastralgia. I especially advise you to make sure the sufferer feeds well and fully. The diet should be generous. A "dyspeptic" regimen makes a case of gastralgia worse. When you are satisfied there is no, or but slight, gastric catarrh in the gastralgia of a fairly vigorous adult, you should direct a dietary after this plan:—Breakfast: bread-and-butter or dry toast, with

some fresh white fish, or some cold chicken or game, or a mutton chop, with a breakfastcupful of cocoa or weak tea or coffee. Dinner (1 p.m.): fresh beef or mutton, with bread, potatoes, cooked green vegetables, a fruit tart or a farinaceous pudding, with a glass of light bitter ale. Tea (at 5 p.m.): bread-and-butter or dry toast, with a small cupful of cocoa, tea or milk-and-water. Supper (not later than 9 p.m.): white fish, or some cold chicken or game, or a little cold meat, with bread, and a glass of ale. (Sir James Sawyer, p. 209.)

HEMORRHOIDS.—*Treatment by Dilatation.*—In the Gazette des Hôpitaux M. Verneuil publishes a note on the treatment of piles by dilatation. According to the author, ninety-eight cases out of a hundred may be radically cured by this simple process. The duration of the treatment scarcely ever exceeds eight days, during four of which the patient remains in bed, and during the remaining four days in his room. Piles of six, eight, ten, twelve, and fourteen years' existence have been completely cured in this manner. Even in cases where the disease is complicated with veritable rectal prolapsus, dilatation should be had recourse to. During fifteen years that the author has practised this method he has not met with one unsuccessful result. He prefers the speculum to the digital method of dilatation. (Medical Record, June, p. 245.)

INTESTINAL CATARRHS AND DYSENTERY.—*Naphthalin.*—Following the recommendation of Professor Rossbach, Dr. N. M. Dolgopolooff, of Kürsk, administered (proceedings of the Medical Conference at the Kürsk Zemsky Hospital) naphthalin in about 140 cases of acute and chronic dysentery and acute and chronic catarrh of the large bowel in children and adults. The drug was given in the dose, varying from 1 to 5 grains, five times a day, either alone, or simultaneously with an emulsion containing castor-oil and opium. Only in two cases naphthalin caused vomiting, and was discontinued; and only in four it remained inactive. In the remaining cases (as far as their subsequent course was known to the author) the remedy gave excellent results, and that even in patients who had been previously vainly treated by various ordinary means. Already, after a few first days of the treatment, diarrhoea subsided, to rapidly cease altogether, tenesmus diminished, stools lost their offensive odour, &c. The author details the case of a boy, aged 9, with chronic dysentery of two years' standing, where recovery ensued from the use of sixty 1-grain pills (taken four or five times a day). In another child, aged 2, with dysentery of eighteen months' duration, the same result was obtained from giving 1-grain doses three times daily for twenty days. In acute cases diarrhoea sometimes ceased after a three days' treatment by naphthalin. (Ibid, May. p. 196.)

Intestinal Catarrh and Dysentery.—Naphthalin in Pill form.—

Bernbeck has found that a pill covered with elastic collodion is especially useful in administering this drug. His formula is as follows: *R.* Naphthalini resublimat., 10 parts; rad. althææ pulv., 5 parts; mucil. gummi arab., q.s. *Ut. fiant pilul.* 100. Dry without heating, and cover with elastic collodion. *Sig.* Two or three pills three times daily. The remedy is especially useful in gastro-intestinal catarrh. The advantage of the collodion coating is found in the fact that it is dissolved in the intestine and not in the stomach, and that no unpleasant taste is experienced from gastric eructation. For the success of the collodion coating it is essential that the pills be carefully dried before its application. (*Therapeutic Gazette*, Aug. 15, p. 557.)

MALIGNANT STRICTURE OF ŒSOPHAGUS.—*Treatment by Tubage.—*

In this form of stricture I would suggest the following plan of treatment:—(1) So long as solids can be swallowed, let the patency be maintained by the passage of bougies, for neither by tubage nor through the opening formed by gastrostomy can solid food be introduced. Well-stewed tripe, rabbit, and pigs' and calves' feet are swallowed readily. (2) When solids can no longer be taken, a short tube should be introduced. This, when considerable dilatation has been effected, may be removed altogether from time to time, and the patient allowed to take solids. This form can be worn till the case terminates, unless pulmonary symptoms supervene, especially cough on swallowing. (3) When the passage of fluids can no longer be borne, then they must be withdrawn altogether from the gullet. This can be accomplished in two ways: (*a*) by the use of Krishaber's long tube; (*b*) by gastrostomy. The duration of life after this stage has been reached will in no case be long, and it becomes a question of giving the patient the greatest amount of comfort. The experience of others as well as my own shows that long tubes may be worn till the termination of a case; and, as I believe, the ulceration will be avoided by using rubber tubes, and passing them by the nose. To this method I give my adhesion, rather than to gastrostomy. Those who have seen many cases know the difficulty that often arises from escape of the gastric juice, and that not a few have been fed into the peritoneum, while the operation, if done when the patient is in a depressed condition, is very likely to be unsuccessful, either from want of union or exhaustion. Other means are sufficient in the earlier stages. The most recent advocate for gastrostomy, Dr. Gross, seems to believe that only those cases of malignant disease in which there is no ulceration are suitable for permanent catheterism. To this I may reply that my most successful case had certainly ulceration when first seen; and this condition existed in all the others at a time when catheterism was giving complete relief.

Again, while I think greater caution must be exercised in dealing with disease at the lower end of the tube, it by no means follows that it is impossible, as Dr. Gross suggests, to enter the stomach. I have had great difficulty in traversing the stricture in two cases; but, I believe, with suitable instruments, and a period of complete rest, with the use of sedatives and rectal enemata, most of the strictures will be overcome; and once a tube has been passed and retained, there will be no further difficulty. (Mr. Charters J. Symonds, p. 276.)

RUPTURED INFANTS.—*A Worsted Truss for.*—Worsted known as Berlin wool is made into a skein of twenty threads, which, stretched out straight, shall be about twenty-two inches long, the threads being tied across at intervals of two or three inches, to keep them together. One end of the skein is placed over the abdominal rings. The folded worsted is passed horizontally across the abdomen, over the line of the crest of the pelvis to the opposite side, round the hips, behind the pelvis, and over the hip on the side of hernia. The folded end is then passed through the loop of the skein, and will here form a knot or bulged portion, which must be carefully adjusted so as to lie against the hernial opening, and, being carried down the upper part of the thigh, between it and the scrotum (in the male), it is brought round the external side of the thigh, near to the great trochanter, and there tied or fixed with a safety-pin to the band of worsted already round the pelvis (see *illustration*, at p. 277). (Mr. E. Lund and Mr. Walter Pye.)

SALOL AS A MOUTH-WASH.—Salol is recommended in the American Druggist as an excellent antiseptic mouth-wash, much preferable to solutions of salicylic acid, as it does not affect the teeth. As it is insoluble in water, it is separated from its alcoholic solution by the latter in the form of minute droplets which adhere to the teeth and gums, and exert there a protracted antiseptic effect. It should be dissolved in alcohol, and enough of the solution added to water to make the mixture contain 3 per cent. of salol. (Medical News, Feb. 26, p. 240.)

SANTONIN.—*How to Prescribe it.*—Dr. Norderling, of Rockford, Ill., gives a very clear account of how santonin should be prescribed to obtain its full physiological effect. In order to accomplish its therapeutic object, it is necessary, first, that santonin be in a form in which its vermifugal action can be exerted; and, secondly, that it reach the habitat of the parasite. Santonin is insoluble in water and dilute acids, but dissolves in the saliva, and the gastric, intestinal, and pancreatic juices. Solution in the gastric juice takes place so rapidly that the maximum dose is completely absorbed in the stomach, and taken into the circulation before reaching the intestine. Consequently,

in order to obtain its vermicidal effect, it must be administered in such a form that it will not be acted upon by the gastric juice. It has been proved by experiment that santonin, when given in an oily solution, is not at all absorbed in the stomach, the entire quantity passing into the intestine; and Küchenmeister has shown that whilst ascarides are not affected by santonin crystals floating in water, they are killed when brought in contact with an oily solution of the drug. In such a solution, any form of oil may be used, and the best effect is obtained by three grains of santonin dissolved in two ounces of oil, to be taken in four doses. It is good practice to add one drop of wormseed oil to each dose, all volatile oils being poisonous to the lower organisms. If movement of the bowels is desired, castor-oil will be suitable, although not in too large a dose, because with strong peristalsis the santonin does not remain long enough in the intestine to produce the desired effect. About two drachms of the oil to each dose will be sufficient. (New York Medical Record; Practitioner, July, p. 53.)

TUBERCULAR PERITONITIS.—*Laparotomy for.*—Kümmel, of Hamburg, at the recent meeting of the German Surgical Congress, reported two cases of tubercular peritonitis treated by laparotomy, as follows:—The first was the case of a young woman, in whose abdomen encysted dropsy existed, in which the retroperitoneal glands were found; the cavity was studded with miliary tubercles. The abdominal cavity was disinfected and sutured; perfect recovery followed. The second case was that of a man, aged twenty, who had ileus after an operation for caries of the os calcis. The intestine was found almost ligated by adhesions. By enveloping the intestine in carefully antisepticized napkins the adhesions were severed, the tissues properly united, and the abdomen closed. Recovery followed, but general tuberculosis followed later. Kümmel cited thirty cases, of which twenty-five were well at the time of his report. In eleven cases the diagnosis was confirmed by the microscope. (Medical News, July 16, p. 75.)

AFFECTIONS OF THE URINARY AND GENERATIVE SYSTEMS.

CIRCUMCISION.—*New Dressing after.*—At the Edinburgh Medico-Chirurgical Society on April 6th, Mr. A. G. Miller showed a new method of dressing after circumcision. It consisted in first closely suturing the remains of the prepuce with from eight to ten catgut sutures, then painting the surface with Friars' balsam and covering it over with two or three plies of cotton wadding, on which the balsam is poured. The glans penis was left sufficiently free to allow of water passing. The band or ring of

dressing should be at least one inch broad. The dressing was not suitable for young infants who were frequently wetting. In the case of older children, they might be allowed to go about on the second or third day, when the dressing would be quite dry, and would not require to be changed or renewed. The case shown was a very good test of the method, as the operation had been done by the house-surgeon for paraphymosis with some ulceration. The dressing was removed ten days after, and the wound was perfectly healed. (Edinburgh Med. Journal, Aug., p. 168.)

DIABETES.—*Arsenic and Lithia in.*—At a meeting of the Paris Société de Thérapeutique, February 23, Dr. Martineau recommended the following treatment, with which, he said, he had cured sixty-seven out of seventy patients suffering from arthritic diabetes:—*R.* Carbonate of lithium, 3 grains; arseniate of sodium, $\frac{1}{10}$ grain; carbonic acid water, 2 pints. Effect the solution under pressure. The effervescing liquid is to be drunk at meals, mixed with claret, and the foregoing dose is to last for at least three meals, being taken at the two principal meals of the day, customary in Paris. No change of diet is necessary. Dr. Martineau's fellow-members—Dr. Dujardin-Beaumetz among them—were somewhat sceptical about the value of the treatment, but it is so simple and easy that it can be given a trial when the patient is not dangerously ill. (Therapeutic Gazette, April, p. 281.)

Diabetes Mellitus.—*A Convenient Formula for Treatment by Lithia.*—Vigier recommends the following as more convenient than Martineau's arsenical liquid containing lithium:—*R.* Lithii carbonat., gr. iss; sodii arseniat., gr. $\frac{1}{25}$; ext. gentian, gr. $\frac{3}{4}$; for each pill. To be taken morning and night, and continued until sugar has disappeared from the urine. (Ibid, Aug. 15, p. 541.)

[See also Dr. Austin Flint's propositions respecting the treatment of Diabetes Mellitus by lithium carbonate and sodium arseniate, at page 224 of this volume.]

Diabetes.—*Saccharine in.*—Dr. Arnold Pollatschek, of Carlsbad, writes in a Hungarian journal on the importance of Fahlberg's saccharine or anhydro-ortho-sulphamide benzoic acid, as Stutzer calls it. Dr. Pollatschek quite agrees with Stutzer, Aducco, and Mosso, of Turin, and Salkowski, of Berlin—all of whose researches on the chemical, physiological, and therapeutical aspects of the subject he quotes at some length—that saccharine is perfectly harmless. He finds that it may be given to diabetics for sweetening purposes, neutralised as proposed by Prof. Leyden with carbonate of soda. Dr. Pollatschek made an attempt to cover the bitter taste of quinine with saccharine, but did not succeed. (Lancet, March 26, p. 644.)

Diabetes.—*Saccharine in.*—We learn that a supply of saccharine (benzoyl sulphonic amide) has at length reached the London market, though in small quantities and at a high price. The body, which is a white powder with a strong sweet taste and a faintly bitter after-flavour, is said to have a sweetening power 250 times greater than that of sugar. Mr. W. Martindale, of New Cavendish Street, W., has furnished us with the following report of its properties as a pharmaceutic agent. One part in 10,000, or a grain in over a pint of water, tastes distinctly sweet. It is only slightly soluble in water, 1 in 500 parts being required; it is more soluble in alcohol, a 4 per cent. solution by weight is saturated solution in rectified spirit; this is equal to about two grains in a fluid drachm, and as it does not dissolve readily, it will be found to be a convenient preparation to keep for use in dispensing as spiritus saccharin. Although to all appearance a white powder, it is in reality slightly crystalline, and being rather light and flocculed, its dust in the atmosphere is easily detected by its sweet taste. When heated on platinum it first fuses and then sublimes, partially decomposed, as it yields a white choking as well as sweet vapour. It has an acid reaction: alkalies render it much more freely soluble in water, but apparently at the expense of its sweetness; on adding it to a strong solution of bicarbonate of sodium, effervescence occurs and an evident almond or benzoic flavour, mingled with the sweetness, is developed in the solution. It would, therefore, appear that it is less compatible with alkalies than with acid or neutral solutions, yet for the use of diabetic patients compressed tablets are prepared in Germany composed of saccharine, mannite, and bicarbonate of sodium; the latter is added to render the tablets readily soluble. Saccharine also possesses antiseptic properties; it has been found to check various forms of fermentation. In this respect, its action is allied to that of benzoic and salicylic acids. Physiologically it is said to be perfectly harmless, being principally voided by the urine unchanged. As typical of its use in disguising the taste of medicines, we have been favoured by Mr. Martindale with samples of the following: namely, salicin, 20 grains in one ounce of water is effectually covered by 30 minims of the above-mentioned spiritus saccharin, 30 grains of salicylate of sodium is disguised by the same quantity, and one part of the spirit to seven parts respectively of liquor strychninæ and tincture of nux vomica makes these very palatable. With quinine it is not so successful, one part of the spirit to three parts of tincture of quinine being required to mask its bitterness. One part of spiritus saccharin to three parts of tincture of perchloride of iron disguises its taste, and the extreme nauseousness of liquid extract of cascara is covered by an equal volume of the spirit. (British Med. Journal, Oct. 1, p. 732.)

ENURESIS OF CHILDREN.—*Sweet Sumach in.*—The fluid extract of the root-bark of the sweet sumach, *Rhus aromatica*, an Anacardiacea indigenous to the U.S. of North America, has lately been successfully employed in nocturnal enuresis of children. It acts as an excitant on the non-striated muscles of the bladder, the uterus, and of the inferior portion of the digestive canal, and beneficial effects have likewise been obtained from it in hemorrhage of the bladder, the uterus, and the rectum, as well as in atonic diarrhoea. Dr. Unna recommends, from three years' experience, this extract in enuresis of children, for which it acts as a specific. He prescribes to infants and children, up to two years of age, five-minim doses in the morning and at bed-time; to children from two to six years of age, ten minims twice daily; and to older children fifteen minims twice daily. He never observed any injurious concomitant effects, even after its uninterrupted use during several months. Its tonic effects, however, are not permanent, the paresis of the sphincter muscles of the bladder returning soon after discontinuing the remedy. It ought, therefore, to be given daily as a rapidly acting palliative until the weakness has been gradually overcome by other adequate measures (training to the habit of regularly emptying the bladder, cold baths, douches, cool beddings, &c.), and only then to be gradually withdrawn. (London Medical Record, April, p. 151.)

Enuresis of Children.—*Treatment by Anodynes per Rectum.*—For two or three years past Dr. Williams has been using anodynes per rectum either as injections or suppositories, of morphine, belladonna, and atropine, and states that he has not only cured six cases by these means, but has temporarily relieved many more who have passed out of sight during treatment. Belladonna and morphine in combination yielded the most satisfactory results. As to the mode of administration, a fifteen-grain suppository of cocoa-butter is most easily handled. It should contain a proper amount of extract of belladonna and morphine. For a child five years old, say one-eighth of a grain of belladonna extract and one-sixteenth grain of morphine, but the doses must be carefully adapted to the particular case in hand, beginning with a small dose, with a smaller relative proportion of belladonna, and increasing the latter and diminishing the morphine as toleration becomes established. If an enema or clyster be preferred, it should consist of about a drachm of lukewarm water, with a few drops of atropine and morphine solution added, and administered with the small hard-rubber syringe (No. 2), especially designed for the purpose. The old-fashioned clyster of starch-water and laudanum is absurdly out of date. Dr. Williams has used nothing for years but morphine and warm water, mixed as for subcutaneous injection, only that the water should be tepid and

not exceeding a drachm in amount. Dr. Williams uses two solutions. The first consists of one-sixth grain of morphine and twenty minims of water. The dose by drops therefrom is the same as that of laudanum, which makes it especially convenient for the nurses. The other is one-sixtieth grain of atropine to twenty minims of water. Reckoning one-sixtieth of a grain as an average commencing dose for an adult, the dose for a child may be graduated by drops precisely as with laudanum. For a child five years old, then, as an enema, one might give for a commencing dose from three to five drops of each solution, mixed with a teaspoonful of warm water. These doses may be differently combined or altered in any way to suit a particular case. (Medical Record, May, p. 217.)

KIDNEY DISEASE.—*Nitro-Glycerine*.—[For some remarks on the Influence of Nitro-Glycerine on Kidney Disease, by Holst, of St. Petersburg, see p. 25 of this volume.]

PAPILLOMA OF THE BLADDER.—[Sir Henry Thompson publishes two more cases in which he successfully removed a villous growth through a supra-pubic opening. In the course of his remarks Sir Henry says:] The history of papilloma is remarkably uniform in the order and progress of its chief incidents. First, a considerable hemorrhage, without known cause, unaccompanied by pain or irritation of the bladder. It was doubtless the absence of those signs which occasioned such bleeding to be almost invariably regarded until lately as originating in the kidney. After an interval of several months, or even a year, a second attack takes place; then recurring hemorrhages, with gradually lessening intervals between, not much pain being experienced unless obstruction to micturition is occasioned by clots. Then unduly frequent micturition gradually appears, which subsequently might be painful, although by no means necessarily so to any great extent; and finally hemorrhage becomes more or less copious and continuous, and forms the most prominent feature of the case. Carcinoma and sarcoma, on the other hand, do not usually produce considerable hemorrhage until the disease has reached a somewhat advanced stage. A painless hemorrhage is very rarely, if ever, the earliest sign. The bleeding is almost invariably preceded, and sometimes for a considerable time, by signs of obstruction, by pain, or irritation of the bladder. In this respect there is a marked contrast to the history of papillomatous growths. This statement of mine has been recently called in question, probably through some misapprehension of my meaning, which may not have been made sufficiently clear. Of its general accuracy, as above stated, my large experience of vesical tumours (I have operated for their removal forty-three times) leaves no room for doubt. (British Med. Journal, June 11, p. 1268.)

PROSTATIC HYPERTROPHY.—*Operative Treatment for.*—A remarkable case is recorded by Landerer (Centralblatt f. Chir.), in which, being unable to crush a small stone owing to prostatic hypertrophy, he performed the median operation, and extracted two small calculi. During the operation, however, he accidentally removed a small portion of the prostate. The patient made an excellent and rapid recovery, and could pass his water subsequently in a good full stream, whereas before he had great difficulty in voiding it. This condition remained permanent fifteen months later. A suggestion is made to perform this operation for relief of enlarged prostate, but the operator has not yet met with a suitable case. (Practitioner, July, p. 47.)

Supra-pubic Prostatotomy.—(Reported by Prof. Belfield, in Chicago Medical Journal.)—The patient, a man 73 years old, had for several years experienced difficulty in urination, and for nearly a year had been practically dependent upon his catheter. There was found symmetrical enlargement of the prostate per rectum, dilatation and catarrh of the bladder, and an impediment at the bladder neck to the entrance of rigid instruments. Exploration of the bladder by supra-pubic incision revealed a solid prostatic outgrowth, or "middle lobe," as large as a hazel nut, and of flattened pear-shape, springing by a short narrow pedicle from the vesical orifice. The pedicle was twisted off with forceps, and the growth removed. Recovery was uninterrupted, the fistula closing entirely on the seventeenth day. Patient has since urinated freely without a catheter, and can now almost completely empty the bladder; the cystitis has subsided. (Edinburgh Med. Journal, Oct., 1887, p. 389.)

Acute Prostatitis.—*Hot Water in.*—Dr. Cazeaux (Thèse de Paris, 1886), finds that hot water enemata and applications to the perineum are very effective at the onset of prostatitis and before the occurrence of suppuration. He advises water at the temperature of 130° F., to be used by the irrigator three times a day to the perineum and in the rectum. (International Journal of Med. Sciences, July, p. 223.)

RENAL CALCULUS.—*Intestinal and other Symptoms in.*—I wish to insist that repeated attacks of intestinal colic, especially if accompanied by nausea, should lead the practitioner carefully to investigate the state of the kidneys and the urine; and to keep his mind open as to the possibility of the symptoms being due to the presence of gall-stones, for I may observe in passing, that I know of a patient, a lady, who, when she was about the age of sixty, suffered for years from most troublesome attacks of colic, affecting the colon, which she completely lost after a fit of jaundice, accompanied by great distension of the gall-bladder, and followed by the evacuation of a considerable

number of gall-stones. Instances of both classes of cases are, I believe, far from uncommon. I wish also to mention two other symptoms which have come under notice, and which, though certainly not common, are presumably not accidental. My friend Dr. J. Mitchell Bruce has observed on more than one occasion rectal troubles accompanying or preceding the descent of a stone. In one remarkable case the first indication of the presence of the stone was a pretty free hemorrhage from the rectum, the stone being passed down the ureter shortly afterwards. Lastly, I have seen twice in the same patient, well-marked Herpes zoster in the course of a lumbar nerve make its appearance during attacks of very severe pain, which were caused by a stone impacted in the ureter. (Mr. Rickman J. Godlee, Practitioner, Oct., p. 247.)

Renal Calculus.—Solvent Treatment of.—At the Medical Society, on March 22nd, 1887, Dr. Ralfe exhibited a specimen of renal calculus passed after six weeks of solvent treatment. It was oat-shaped, eroded on the surface, measuring one-third of an inch long, and weighing three grains and a half. It was composed chiefly of oxalate of lime, with a few crystals of uric acid scattered over the surface. The remedies employed consisted of lithia and turpentine in a mixture, with Dover's powder at night. The patient was also directed to drink at least three pints of filtered rain-water daily. Under this treatment the urine, which at first had a specific gravity of 1025 and contained much blood and pus, became clear, and the specific gravity fell to 1014, whilst the attacks of colic diminished. Dr. Ralfe's method differs from that proposed by Sir William Roberts, in that he does not seek to diminish the size of the calculus by chemical solvents—a doubtful and difficult process,—but by checking its growth, by keeping the specific gravity of the urine low, and also by diminishing existing pyelitis to allow free passage to the concretion. Dr. Ralfe observed that there are many calculi small enough to easily slip down a ureter, but are prevented by the swollen condition of the orifice. He illustrated this by a specimen, which had been retained for several days, owing to the patient suffering from gouty pyelitis, though the concretion was quite minute. As soon as the pyelitis was relieved, the calculus passed easily. In addition to distilled water and turpentine, Dr. Ralfe spoke highly of benzoate of lithia or potash. He advises recurrence to this mode of treatment: (1) When the calculus is recently formed and is still small, and is retained chiefly by the swollen condition of the mucous membrane of the pelvis of the kidney. (2) In recurrent calculi the pisiform concretions of elderly people. In these cases the calculi passed before the administration of the remedies are about the size of a pea; after, they diminish to

that of a mustard-seed (specimen shown), or cease altogether. (3) In cases when, owing to the obesity of the patient, or broken health, nephro-lithotomy is not advisable. In these cases we may hope the distilled water may in time lead to the disintegration of the calculus, as in a case recorded by Dr. Ralfe, whilst the terebinthine remedies undoubtedly diminish the pyelitis and the tendency to colic. (Lancet, March 26, p. 627.)

RENAL DISEASE.—[For Dr. Broadbent's remarks on the Prognostic Value of High Arterial Tension in Renal Diseases, see pp. 23, 24 of this volume.]

SUPRA-PUBIC SUPPURATION.—At the Sheffield Medico-Chirurgical Society, on Feb. 17th, 1887, Mr. Atkin read notes of the case of a woman, aged twenty-seven, who had suffered from nearly constant vomiting for two months. She was very emaciated, and complained of great pain in the womb. Pulse 120; temperature 100°. She stated that the illness began with griping pains, followed by a discharge of blood from the vagina. Ether was administered, and the os found firmly closed, but soft, and the uterus not enlarged. Having emptied the bladder, an exploratory incision was made above the pubes, and a couple of ounces of fetid pus evacuated. The cavity proceeded backwards, lying over and roofing in the bladder. It was carefully drained, and the woman gradually recovered. Mr. Atkin drew attention to the anatomy of the so-called *cavum Retzii* described by Hyrtl, and commented on the existence of a space in the sub-peritoneal tissues. The doubtful origin of the suppuration, the lowness of the temperature, and the constancy of the vomiting were alluded to. (Lancet, April 2, p. 681.)

SUTURE OF THE BLADDER FOR INTRA-PERITONEAL RUPTURE.—*A Successful Case of.*—Henry P., aged 24, was admitted into St. George's Hospital in the night of June 9th, 1887. He had been drinking for several days, and on the day of admission, about 7.30 p.m., in a quarrel, he received a kick in the abdomen. He had not emptied his bladder for an hour before the injury, and had been drinking freely in the interval. He felt great pain on the receipt of the kick, walked home (about a quarter of a mile), and then, as the pain did not abate, and he could not void urine, he was taken, at 9 p.m., to Dr. Powell, of Battersea Park Road, who passed a gum catheter, and drew off about five ounces of blood-stained fluid; but, suspecting rupture of the bladder, sent him to the hospital. Mr. Vernon (then house-surgeon) passed a silver catheter about 11.30 p.m., but drew off only about one ounce and a half of bloody fluid. I saw him about 1.30 a.m.—i.e., about six hours after the receipt of the blow. He was in great pain, but not collapsed. Examination of the abdomen showed nothing abnormal, but as the symptoms

appeared to point to ruptured bladder, I decided, in consultation with Mr. Bennett, to whom I was indebted for most valuable assistance, to examine the patient under ether, with a silver catheter, with a view to abdominal section and suture, if that operation should seem called for. When first passed into the bladder the instrument drew off hardly anything, but on pressing it onwards a large quantity (more than half a pint) of blood-stained fluid was obtained, and the point of the catheter was felt nearer the umbilicus than the pubes. Judging that the catheter must be outside the bladder, the pubes being shaved and the skin washed with carbolic lotion, I made an incision in the middle line for about three inches and a half above the pubes, and deepened it gradually till the peritoneum was exposed, covering some coils of small intestine. The catheter was felt through this. The urachus was easily distinguished passing up to the umbilicus, but the position of the bladder could scarcely be defined. It seemed, therefore, certain that the rent was not extra-peritoneal. Accordingly the peritoneum was opened pretty freely, the intestines pushed upwards with a flat sponge, and the rent in the bladder exposed. This was of a horseshoe shape, convex towards the right side. The finger introduced into it felt the catheter, and when the point of the instrument was withdrawn the opening of the urethra into the bladder could easily be distinguished. The rent was judged to be about two inches in length, and was completely in sight. A suture was introduced behind its posterior termination, to hold and pull forward the bladder, and then the rent was closed by means of eight points of suture of fine silk, soaked in carbolic lotion, passed through the peritoneal coat and muscular tissue, but avoiding the mucous membrane. The sutures were carefully examined after they had been tied, and if the interval appeared to gape at all a fresh one was introduced, but the bladder was not injected. After the eight permanent sutures had been tied, the first or temporary suture was withdrawn. The peritoneal cavity was washed out plentifully with warm water. No clots were seen in it, and but little bloody fluid. Then the abdominal wound was closed by four deep silver sutures, in which the peritoneum was carefully included, and four superficial ones. Finally, an incision was made in the median line of the perineum, which seemed to open the urethra, and an attempt was made (unsuccessfully as it turned out) to pass a drainage-tube that way into the bladder. No spray was employed. The operation lasted about an hour. A morphia injection was administered, and the patient slept well, but vomited after the ether. Next morning the pulse was regular and strong; temperature 101° . He complained of thirst and of pain in the lower part of the abdomen, but had voided urine on three

occasions naturally ; it was blood-stained, and contained a good deal of albumen. The drainage-tube was removed as useless, and the perineal wound allowed to close. Daily notes are unnecessary, for there were no symptoms to record. I looked at the wound on the fifth day, and found it nearly healed. The temperature fell gradually to the normal, and the pulse came down on the fifth day to 76. The bowels remained constipated for a week, and were then acted on painlessly by castor oil. On June 22nd (the thirteenth day after the accident) all the sutures were removed from the abdominal wound. As there seemed a little irritation about the lower part of the wound, a few pieces of strapping were applied. He wanted to get up, but was persuaded to keep quiet for a few days more. On June 29th he was allowed to leave his bed, as he appeared perfectly well. The wound seemed completely healed. The temperature had been exactly normal for more than a fortnight. He left the hospital shortly afterwards, and was seen the other day in perfect health. (Mr. Timothy Holmes, *Lancet*, July 23, p. 153.)

[See also Sir William MacCormac's paper in *Retrospect*, vol. xcv., p. 300.]

TUMOUR OF THE KIDNEY.—*Its Physical Characters and Signs.*—

1. It occupies the kidney region, filling up the loin between the last ribs and the iliac crest. (It should be noted that the hilus of the normal kidney lies about two inches from the middle line, and is opposite to the first lumbar spinous process.) 2. It is rounded everywhere ; there is no sharp edge to be felt, and no notch, as in the spleen. 3. All is dull on percussion between the tumour and the spine, whereas in the case of a tumour of the spleen a resonant note can usually be brought out between the posterior margin of the mass and the spinous processes. 4. Unless the renal tumour is very large, it is possible to make clear its lower limits, and to demonstrate its freedom from connection with the pelvic viscera. Its upper limits are not so readily made out. 5. The renal tumour, as a rule, does not descend on inspiration. 6. In front of it will be the colon. 7. If the tumour be innocent, it will not extend backwards, will not cause a protrusion of the loin. A cancer of the kidney may cause such a bulging in the lumbar region, and an abscess about the kidney will certainly have that character when it has attained to any dimensions. (Mr. Treves, *Lancet*, Sept. 24, p. 604.)

URÆMIA.—*Use of Diuretics in.*—With regard to the employment of diuretics, considerable difference both in theory and practice seems to prevail. And this is in great part due to the vague, indefinite meaning attached to the word “diuretic.” If it simply means something which increases the excretion of urine, by all means let it be given if it do so ; and in the case we are con-

sidering elaterium, pilocarpine, digitalis, antimony, vapour-baths, and even general bleeding will be found to be excellent diuretics. But if it is used in the more restricted sense of some substance which, by its direct action on the secreting structures of the kidney, stimulates them to increased activity, then, granted for argument's sake that such a substance exists, it ought not to be given. The blood is already loaded with, and the kidneys exposed to the irritating action of, the most powerful diuretics, viz., the substances which it is their special function to deal with and to excrete. In fact, the suppression of urine is due in no small part to this *over-stimulation*, and to add to this can scarcely be wise, or even scientific. The only possible exception I would make to this is the addition of a small quantity of some salt of potassium or of lithium to the diaphoretic or purgative dose in order that urates may pass through the kidney in a more soluble form than that of sodium urate. (Dr. Jas. Andrew, p. 221.)

AMPUTATIONS, FRACTURES, DISLOCATIONS, AND DISEASES OF THE BONES, JOINTS, ETC.

CONGENITAL DISLOCATIONS OF THE HIP.—This subject, which seems to have attracted less attention than it deserves since it was accurately described by Dupuytren, is treated of briefly by Adams in the *British Medical Journal* (see *Retrospect*, vol. 93, p. 240). He considers these points in the pathological and clinical history of such cases to be established: (1) In all specimens the head of the femur, though displaced upward, has been found to be still within the capsular ligament, so that no true dislocation exists. (2) In every dissection the osseous rim and the cotyloid ligament have been found wanting, so that the acetabulum is represented only by a flattened triangular depression. This defective condition can only be a congenital malformation. (3) The head of the femur is diminished in size, flattened and irregular in outline, and covered with a thin layer of articular cartilage. The round ligament is sometimes elongated, but is often absent. The neck of the femur is nearly horizontal and curved or twisted backward on account of the altered position of the head in adults. The great trochanter is diminished in size and altered in form. (4) The capsular ligament becomes elongated and greatly increased in thickness and density, sometimes almost equal to cartilage, compensating to a certain extent for the absence of the acetabulum. (5) In consequence of the absence of the acetabulum, the head of the femur gradually ascends to the dorsum ilii after the child begins to walk. It is doubtful whether any displacement exists at birth or until the walking period, though the requisite conditions undoubtedly are present. Shortly after this time the lameness

is noticed, and subsequently inequality in the length of the limbs becomes apparent, but before this no inequality can be detected. There is no evidence that the displacement is ever due to muscular action. (6) The gluteal muscles, from disuse, pass into a state of fatty degeneration. (7) If treatment is neglected in cases of displacement at both hip joints, the pelvis gradually becomes horizontal, with the lumbar vertebræ projecting anteriorly and the sacrum depressed between the iliac bones and quite horizontal. The pelvic bones are also altered in shape. When the displacement is at only one hip, obliquity of the pelvis, altered shape of the pelvic bones, and severe lateral curvature of the spine result. (8) The theory that this is a traumatic dislocation produced by the accoucheur in difficult labour is negatived by the pathological conditions and by the fact that in a very large proportion of the cases in which the character of the labour was known it was easy and natural. The treatment consists in recumbency, and light continuous traction. Mr. Adams uses an extension-couch, consisting of a movable plane on which the child can be lifted from the bed, carried about the house, or taken into the open air on a spinal carriage, the extension being made by a check-pulley. (Dr. M. L. Foster's report in New York Med. Journal, Aug. 20, p. 220.)

DISLOCATION OF THE SHOULDER.—*Treatment by Right-angle Traction.*—I would emphasize once more the three essentials of Dr. Macleod's treatment, which is something more than right-angle traction. They are: 1st. Relaxation of all muscles. 2nd. Minimising of pain. 3rd. Traction in a direction at a right-angle with the trunk. The first indication is fulfilled by placing the patient flat on his back on the floor, and the second by raising the arm to a right-angle with his body. If the method is to succeed, he will soon feel comfortable, and all spasm will disappear: don't hurry him. The third indication will be fulfilled by applying traction, very steadily, and moderate in amount; and often the operator will be surprised by an easy conquest. (Dr. W. Fairbanks, Edin. Med. Journal, July, p. 32.)

DUPUYTREN'S CONTRACTION.—*Kocher's Operation for.*—From the description by Prof. Langhans, of the histological conditions of the cords of tissue removed in a case of finger contracture, as given by Prof. Kocher, of Bern, in the *Centralblatt für Chirurgie*, the trouble seems to consist of neoplastic or inflammatory changes, partly in the palmar aponeurosis, partly in the neighbouring tissues, including the coats of the arteries and also the capillaries, about which a subendothelial granular adventitia has formed. The principal change is the great increase in number and size of the cells of the tissues affected, causing a very great crowding, with the appearance of granules, either

rod-shaped or oval, for the most part regularly arranged in a longitudinal direction, separated laterally by fibres of the ground-substance. These present, after staining with borax-carmin, under the microscope, the appearance of reddish stripes or bundles. Only in the middle of the most granular places is this regular arrangement interrupted. Here the granules are shorter and broader, and lie very close, in every possible relation to each other, so that the fibrous structure of the aponeurosis seems lost. When the granules lie upon the surface, they resemble vesicles. The adventitia of the arteries is very rich in granules, mostly oval. An occasional round one is seen, perhaps an oval one seen foreshortened. No migration of leucocytes was found to mark an inflammatory process. Langhans, on this account, is of the opinion that the trouble is neoplastic. Kocher maintains that the migration of leucocytes has not been excluded with certainty, and that their absence is not sufficient to prove the condition to be non-inflammatory. He considers it a chronic plastic inflammation. In either case, the evidence is indubitable that it is a disease of the palmar aponeurosis, and that a mere division of the skin or aponeurosis cannot give lasting benefit, in whatever way it may be performed. Kocher maintains that the proper operation is the complete extirpation of the aponeurosis with all its off-shoots through a single integumental incision, with immediate closure of the wound with sutures. Primary union usually takes place. If this is done in the early stages, a soft, non-adherent cicatrix remains. In old cases the skin is sometimes more or less adherent; the adherent portions should be excised. If Langhan's opinion that there is a neoplastic formation is correct, the entire extirpation of the aponeurosis is the only operation which promises any security against recurrence of the disease. (Dr. M. L. Foster's report in New York Med. Journal, Aug. 20, p. 222.)

HALLUX FLEXUS.—*Contraction of the Metatarso-Phalangeal Joint of the Great Toe.*—At the Clinical Society on March 25th, Mr. Davies-Colley called the attention of the Society to the condition of Contraction of the Metatarso-Phalangeal Joint of the Great Toe, of which he had been unable to find any description in surgical writings. He had had five cases under his care during the last nine years. The disease consisted simply of flexion of the first phalanx of the great toe through 30° to 60° , with extension of the second phalanx, and some swelling and stiffness of the metatarso-phalangeal joint. All the cases were in young men. It seemed probable that later in life the deformity tended to change to hallux valgus. There was no paralysis of the extensor proprius hallucis, and, as far as he could judge, the flexors of the first phalanx and the plantar fascia were not primarily affected. The two causes to which he would attribute

the condition were—(1) an injury to the joint, followed by contraction similar to that which is observed in the knee-joint; and (2) the pressure of short rigid boots upon an abnormally long great toe. The condition is very painful, and the patients walk with difficulty, resting their weight upon the outer border of the foot. In those cases he had subcutaneously divided the inner band of the plantar fascia and the short muscles of the sole about three-quarters of an inch behind their insertion into the sesamoid bones and first phalanx. All these cases were for the time cured, but one returned in two years in a still worse condition as regards flexion, with some outward displacement in addition—in fact, in an incipient state of hallux valgus. In this case a good result had followed resection of the metatarso-phalangeal joint. In two other cases he had excised the proximal half of the first phalanx, leaving the head of the metatarsal bone, with the sesamoid bones, and interfering as little as possible with the attachments of the muscles. Primary union had followed, and the patients were soon able to walk upon the flat sole. In one of them, twenty-two months after the operation, there was no appearance of deformity, and the patient had walked twenty miles without any difficulty on the day preceding. Mr. Davies-Colley would suggest that the deformity should be called hallux flexus, and that if the cases were too bad for treatment with rest and a splint, resort should be had to subcutaneous section of the muscles and fascia, or, in more severe cases, to the removal of the proximal half of the first phalanx. (*Lancet*, April 2, p. 678.)

Hallux Flexus.—Stiffness of the Great Toe in Male Adolescents.—Mr. Reginald Lucy, of Worcester, writes:—I should be glad to know if any of my fellow-members have met with the following conditions in practice, and, if so, what are the causes, and what treatment (if any) has proved successful? The cases I have seen occurred in boys soon after puberty. The symptoms complained of are—pain in the metatarso-phalangeal joints of one or both great toes, with inability to dorsi-flex or hyper-extend the toe at the above joint, the attempt being accompanied by pain. They can flex the toe, but cannot bend it upwards, and it remains stiff and fixed in a straight line with the sole. On manipulation of the affected toe or toes, there is pain referred to this joint, and some tenderness in the ball of the toe. No thickening of the joint-ends or apparent hindrance to dorsi-flexion is present, while the other toes are painlessly mobile in both directions. The patients are generally boys who have a good deal of walking and standing to do, with no history of injury, rheumatism, or gout. An examination of their boots generally shows them to be short when the weight of the body extends the foot longitudinally, while the vertical depth of the

toe-cap appears to be less than the thickness of the terminal phalanges of the toe; the soles also were thick and stiff. Probably then the metatarso-phalangeal joint is rendered functionally useless by the long-confined position of the great toe in a straight line, owing to the defects in the boot above mentioned. The joint becomes stiff, and pain probably prevents active dorsi-flexion, coupled with weakness of the extensors acquired by disuse. When one toe-joint is affected, the patient limps in walking, dreading to raise himself on his toe—and so places the whole foot flat on the ground and lifts it again without bending it. But with the toes of both sides affected, the patient is crippled, and walks with great pain, after the manner of extreme double splay-foot. Errand and telegraph boys seem especially liable to this affection. Treatment which has proved partly successful consists in painting the joint with iodine, and ordering a longer boot with higher blocked toes, as much rest as possible being also enjoined. (*Brit. Med. Jour.*, April 2, p. 726.)

IODOL *versus* IODOFORM.—Iodol is odourless or nearly so, tasteless, produces no constitutional effects, contains nearly as much iodine as iodoform, and parts with it more readily. It is antiseptic, anæsthetic, and a promoter of granulation and healing. It arrests suppuration, and deodorises foul secretions. Possessing thus all the virtues of iodoform, it is surely preferable on account of its pleasant and slight odour, and absence of taste. It does not disturb the stomach as iodoform does. I am induced to give this short account of the drug in order to bring it to the notice of English practitioners, who will find it I am convinced a very useful addition to their daily pharmacopœia. (*Dr. Norris Wolfenden*, p. 206.)

POTT'S FRACTURE.—*Treatment.*—There is no difference in the principle of treatment of Pott's fracture from that of any other. There are two objects to be attained—(1) the reduction of deformity; (2) the maintenance of reduction. The reduction of deformity is accomplished the more readily in proportion to the absence of delay. Water dressings and Fabian policies should be rigidly discarded, as even twenty-four hours may make a material difference in the easy success of manipulations. My advice to house-surgeons and others is to seize the earliest chance of replacing the astragaloid luxation. A patient brought straight from his fall, with no matter how terrible an eversion, presents no approach to difficulty. It is hard to give any rule of procedure which alike will remedy the defect of symmetry in all cases. Generally speaking, after flexing the knee it is best to firmly grasp the foot, the dorsum in the right hand and the heel in the left, and to steadily pull for a few seconds. Next move the foot a few times from side to side and powerfully invert. Should this

fail, start again, repeating the former movements, and on each occasion a gain in the right direction is recorded. This may be even again repeated. If, notwithstanding, deformity yet remains, increase it by still further everting the foot, and then repeat the primary manipulations. Should it still be unsatisfactory a gradual replacement must be attempted by means of pads. But the effort at reduction should be long continued, and very rarely indeed given up as futile. Once reduction be complete there is no tendency to recurrence of deformity, and therefore no real occasion to employ those splints which are devised to counteract special displacement. Lest, however, a little deformity remain, it is well to put on a couple of side splints and a posterior splint, the side splints being armed with pads suitably arranged to minimise deformity. The splints I have been accustomed to use are made of malleable sheet iron, and the practitioner can with his foot press the ends of both side splints, so that they approximate on the sole, forming a support which maintains the ankle at right angles. When the splints are adjusted the patient must be directed to flex the knee and lie on the outer side of the leg. Just a few words respecting the position of the ankle. It is of the utmost importance that the ankle be kept at right angles, and that the bed-clothes be prevented from pressing upon the toes and extending the joint. After results, very serious by reason of their tediousness, are due to neglect of this precaution, and hardly a month passes but a case presents itself at our out-patient department, walking upon his toe with a contracted tendo Achillis, which might have been well months previously were it not due to the overlooking of this apparently trivial detail. Patients should be kept in splints for fully five weeks, and even then the foot should only be very tenderly dealt with. Mr. H. O. Thomas is accustomed to crook the heel of the boot, the slope being from without inwards, the lowest point being on the inner side, as soon as the time for walking commences, and this precaution will be found of much service. The more moderate the exercise during the initial period of walking, the better the ultimate result. The patient should be kept under observation for at least three months. Personally I very rarely treat a Pott's fracture, which appears at the out-patient department as an indoor-patient. With proper precautions, complete reduction, and firm splinting, I have hitherto experienced no evils by this practice. Rest should of necessity be prescribed during the intervals between visits. (Mr. Robert Jones, Liverpool Med.-Chirurg. Journal, July, p. 269.)

PSOAS ABSCESS.—*Method of Opening.*—The method of evacuating a psoas abscess, which I have adopted in a large number of cases, and which I recommend with confidence, is by a free anterior as well as posterior opening and by then washing and draining the

cavity right through. The first opening I make close above the outer end of Poupart's ligament, using the scalpel until about an inch of the length of the fibres of the aponeurosis of the external oblique has been exposed. I then scratch through the fleshy attachment of the internal oblique and transversalis, and, keeping well below the level of the peritoneum, thrust the director into the swelling. Pus escapes, and the opening is enlarged by the dressing forceps and the finger. A stiff probe is then passed through the abscess cavity and made to project beneath the skin on the outer side of the erector spinæ. With this as a guide, a counter-opening is made in the loin. The large cavity is then flushed perfectly clean with a warm antiseptic solution, and a drainage-tube of the size of a penholder is laid through the chasm for a few days, being afterwards replaced by a silk thread. The parts are liberally covered with bulky pads of wood-wool and finely picked oakum in gauze bags; these are kept in position by a towel arranged as a binder, which, for the sake of compression, is tightly drawn and fixed with safety pins. Next day the cavity is again washed out, under chloroform, if necessary, the wounds being dressed as before. After this, the less it is interfered with the better; if the temperature do not rise, and the discharge do not soak through, the dressings may be left for three or four days, or longer. From the first day the discharge becomes thin and watery; suppuration in the ordinary sense of the word is at an end, and the cavity steadily contracts into a narrow passage. If the abscess be so small that the surgeon does not feel inclined to attack it from the front, he may readily work down on to it above the iliac crest, on the outer side of the erector spinæ. The scalpel is needed only for the skin incision, the rest of the operation being performed with equal ease and safety by the use of a steel director and the ring dressing forceps—at any rate in children. Of the evacuation of unilateral psoas abscess, after the manner recorded, I have had a large number of examples; and it so happens that we have lately had under treatment in the ward, at the same time, three cases of double psoas abscess. (Mr. Edmund Owen, p. 234.)

TRAUMATIC LYMPHATIC ŒDEMA.—I venture to think that glycerine of belladonna is not made as much use of as it might be in cases of lymphatic œdema or inflammation. I append this case as one of peculiar severity. The patient was sent up to me from the country originally to have his arm amputated, as nothing could be done for him. It occurred to me that the condition here reported was one of obstruction of the entire lymphatic system of the forearm, and I adopted the well-known application. My patient was a man, about 30 years of age, who had the bones of his right forearm broken at about the middle, with great contusion of the soft tissues. The fracture was not

compound, though there were wounds of the integuments. The arm, after the accident, was put up in splints, and so kept for five weeks, before being sent to me. The patient thought that the swelling began at about the date of the injury; and, though many remedies were employed, it continued to increase. When I first saw him there was a curious solid œdematous swelling affecting the forearm, mostly dorsally, from about two and a half inches from the condyles to the back of the hand, and extending obliquely round the wrist to the palmar surface; it was extremely painful. It exactly resembled elephantiasis. Glycerine of belladonna was freely applied to its surface, and the limb swathed in wool. In about two days there was most marked improvement, the surface being more supple and the swelling less; and in three weeks' time the lymphatic œdema had nearly disappeared, and when I last saw him (recently) entirely. I have lately seen a case of fracture of the humerus high up where this lymphatic œdema was most marked, and which yielded in the same way to the same agent. (Mr. Edward Bellamy, Surgeon to Charing Cross Hospital. British Med. Jour., April 30, p. 933.)

AFFECTIONS OF THE SKIN, ETC.

ABSORPTION OF DRUGS IN LANOLINE OINTMENTS.—The power of lanoline to carry substances through the skin and into the general circulation has been assumed mainly on the dictum of Liebreich, its distinguished discoverer. Dr. Paul Guttman, of Berlin, has instituted experiments to determine the question, and to contrast the penetrating effect of lanoline with that of lard. He selected salicylic acid and iodide of potassium as substances, the presence of which in minute quantity could be accurately ascertained in the urine. Lanoline is said to be specially suitable for bodies soluble in water; yet in the case of iodide of potassium there was a slight but distinct difference in favour of lard as an excipient. The investigation showed that lanoline as a vehicle for iodide of potassium and salicylic acid caused no greater absorption through the skin than ordinary lard. "It is self-evident that the results obtained hold good for the absorption of other medicinal substances." (Dr. Jamieson's Report in Edinburgh Med. Journal, Aug., p. 189.)

ACNE.—*Treatment of.*—Lassar recommends a treatment of acne which, he says, is easy of application and nearly always successful. He uses a modification of the old ointment of Wilkinson in the following form:—℞. β Naphthol, 150 grains; sulph. præcip., 750 grains; vasel. flav. or lanol. puriss., sapon. viridis, āā 375 grains. M. leniter terendo fiat pasta. The paste is spread in a thin layer on the affected skin, and left on for fifteen to

thirty minutes. A burning sensation is felt, but this soon disappears; the ointment is then rubbed off, and powdered talc is dusted over. This is followed by a slight inflammatory reaction, which soon gives way to browning of the skin, and finally desquamation. The whole process is compared to the browning, &c., of sunburn. The desquamation may be shortened by the nightly application of a two per cent. salicyl-zinc-amylum-vaselin-paste. Lassar has employed this treatment in more than 100 cases, and relates some very successful cures of very bad cases. This paste is of service, too, in other superficial inflammatory skin diseases, as sycosis of the beard, and in lupous granulations. (Medical Chronicle, Aug., p. 413.)

Acne.—Treatment.—Bulkley, as quoted by the Monatshefte für Praktische Dermatologie, 1887, gives the following prescriptions:—For *sebacea oleosa* of the face the following lotion: R. Potass. sulphat., zinci sulphat., āā 31; aq. rosarum, 3 3 $\frac{3}{4}$. Each of the salts used should be dissolved in half the fluid, and the solutions mixed. Repeated bathing with weak solutions of soda (1 or 2 to 600), followed by the application of an alcoholic solution of corrosive sublimate (1 to 200 water and 1,000 alcohol) generally suffices to lessen the excessive formation of sebaceous matter. Weak solutions of ergotin and belladonna or of atropia are useful when sublimate does not agree.—*Acne sebacea cerea* of the face may be treated by this ointment: R. Bismuth. subnit., 31; ung. hydrarg. oxyd. rubr., gr. 30; ung. hydrarg. præcip. alb., 32; ung. rosat., 36. M. Fiat unguentum. (Medical News, April 30, p. 489.)

ALOPECIA AREATA.—Treatment by Blisters.—Schachmann has found the treatment of this disease with blisters to be the most efficient, and reports (Ann. de Derm. et de Syph.) twenty-nine cases treated by him in this way. The duration of his treatment was never more than three months, and generally less than two. In no case were the blisters followed by erysipelas or other complications. His mode of employing blistering was as follows: A blister as large as the denuded area is applied upon the patch and left on until the bullæ form, then removed, and the blister dressed. When the skin is dry, usually on the third day, a new blister is applied, and so on up to three, six, or even ten blisters. The remainder of the head is rubbed morning and night with oil of turpentine 20 parts, ammonia-water 5 parts, and water 100 parts. If there is but one moderate-sized patch or a few small ones, blisters are applied to all simultaneously. But if the patch is very large, or when the whole scalp is affected, the head is divided into districts, and these are attacked successively. The hair is shaved from about the patches. (New York Med. Journal, July 23, p. 112.)

BOILS.—*Treatment of.*—Bidder (Berl. Med. Gesell., 19th Jan., 1887), has treated boils for many years by means of parenchymatous injections of carbolic acid solution, on the supposition that they were of parasitic origin. Their causation is now established, the staphylococcus pyogenes aureus being probably the most frequent offender (Garré). Bidder operates by selecting a spot about half an inch from the central core, plunging the needle in and injecting the central focus so as to flush out both it and the passages which run out from it. This is repeated from the opposite side, and the spot is then covered with sticking plaster, or empl. mercuriale. In large furuncles it may be necessary to repeat the process several times; but in most cases the temperature drops at once and the sores begin to heal. Lassar finds it useful to extract the core by means of blunt spoons of very various sizes, the edges of which are slightly sharpened. When this is done, and the cavity washed out, the disease is quickly cured, and the sores soon heal. Lassar says that the pain is but slight. Gottmann quoted the experiments of Passet, who found that a 5 per cent. carbolic solution was quite sufficient to kill cultivations of staphylococcus aureus and albus. (Dr. Brooke's report in Medical Chronicle, July, p. 330.)

CHILBLAINS AND ERYTHEMATOUS CONGESTION OF THE HANDS.—Besnier thus combats the congestive state of the skin, so frequent in the extremities of young lymphatic subjects—a congestive state which causes a bluish aspect, and a sort of hypertrophy of the hands and feet, as soon as the cold weather comes, and predisposes to frostbite, which persists with the most discouraging pertinacity. Besnier recommends for these patients foot and hand baths of a decoction of walnut leaves. Immediately after the bath they are to use frictions with camphorated alcohol, and then powder the parts with the following mixture: R. Salicylate of bismuth, 5·0; amylum, 45·0. They should avoid all exposure to excessive cold. At evening, if great itching is present, the friction with camphorated alcohol may be replaced by the following: R. Glycerine, rose water, āā 25·0 grammes; tannin, 05·0 centigrammes. And the powder used as before. If the chilblains ulcerate, he advises that they be dressed with the walnut leaves which have been used to make the decoction. (Dr. Jamieson's Report in Edinburgh Med. Journal, June, p. 1139.)

CHRONIC ECZEMA.—*A Case Treated by Counter-irritation.*—Mr. R., aged 60, on August 5th, 1885, after a chill had a severe general attack of eczema, with bronchitis and nocturnal attacks of spasmodic asthma; by appropriate treatment all these symptoms were subdued, and a great deal of eczema had disappeared by the end of the month; every night, however, he had acute exacerbations in the legs, which itched violently, and fresh pap-

ules came out. On August 31st I ordered him to have a tile heated and wrapped in flannel and applied to the lumbar region. When I saw him again on September 3rd there had been no return of these nocturnal exacerbations on the legs, but the face and arms were giving him great trouble. I tried to induce him to put on a mustard-leaf to the nape, but it was not until he had endured ten sleepless nights that he would consent to try the mustard. He then put it on, and was so satisfied with the result that he put on another the next night of his own accord, and the nocturnal attacks were at once greatly relieved, but as there was still some irritation, I painted on liq. epispasticus. A rather severe blister ensued, but from that time I had no further trouble, and in a fortnight I ceased to attend him. (Dr. Radcliffe Crocker, p. 313.)

CHRONIC SHINGLES.—Besides the ordinary acute form of zona, Leudet, of Rouen, describes one which lasts months; in it the ulcerations are very deep, or the cicatrix ulcerates afresh, and this process repeats itself several times. The ulceration may be accompanied by redness, swelling, and by a pseudo-phlegmon of neurotic origin. Finally, the ulcers cicatrize, and may be replaced by keloid; this constitutes a true chronic variety of zona. Zona may also recur in the same situation; or it may extend successively to several branches of the same nerve, or of contiguous nerves. Or lastly, the herpetic eruption spreads from one nerve to a distant one, or even to one which has no anatomical relation with the one first attacked. In addition to examples illustrating these, he cites a case where a zoster of the forehead occurred in a tubercular person, who died nine months later. The histological examination made by Cerné showed lesions of the Gasserian ganglion, and alterations of the nerve-filaments. (Dr. Jamieson's Periscope in Edinburgh Medical Journal, Sept., p. 286.)

COCAINE IN SKIN DISEASES AND SYPHILIS.—Lustgarten publishes some thoroughly practical remarks on this subject. He first states that cocaine applied to the skin when the epidermis is uninjured is not absorbed and has no effect, but it acts when the horny layer is thin or absent. In acute and subacute eczema, with frequent vesicular and greatly itching relapses, painting with 2 per cent. solution of cocaine once or twice in twenty-four hours has a good sedative effect on the itching. In eczema of the anus and genital regions of both sexes, in addition to warm sitz-baths and daily washing with soap, cocaine is very useful. He prescribes: Cocainæ oleatis 0·40—1·00 gramme; lanolini, 18·00; olei olivæ 2·00; misce. A portion of this ointment is to be rubbed into the affected part for several minutes twice daily and then powder used. In pruritus ani, suppositories may be

applied with 0·05 of oleate of cocaine. To still the pain of the application of nitrate of silver one may apply several times a 2 per cent. watery solution of hydrochlorate of cocaine. The same solution is also useful as an injection in chordee. Into the subcutaneous tissue, preparatory to operations, Lustgarten has used in fifty cases hydrochlorate of cocaine, 0·50; 2 per cent. solution of carbolic acid, 10. The author cautions us against the toxic effects of cocaine, having seen three cases of this action when only gr. 0·05 had been used. (The Practitioner, Sept., p. 214.)

DERMATITIS GANGRENOSEA INFANTUM.—At the Royal Medical and Chirurgical Society, on June 14th, 1887, Dr. Radcliffe Crocker read a paper on Dermatitis Gangrenosa Infantum. Four groups of cases were described. In the first there was no evidence of varicella antecedent to the gangrenous or ulcerating eruptions, and in most it was distinctly negatived. In the second group are cases in which varicella has preceded the sloughs or ulcers, which either developed immediately upon the varicella postule or occurred as a sequela beginning in independent lesions. In the third group vaccination was the immediate antecedent. In the fourth group are placed certain cases of local gangrene resembling cancrum oris; but the individual lesions began in exactly the same way as the independent eruption which followed varicella, and there was a tendency to generalisation, or, at all events, to extension beyond the region in which it started in some of the cases. A general account of the disease was drawn up from an analysis of the preceding and other cases, and it was shown that there is great difference in the severity of the eruption. In some the gangrenous patches were so numerous and extensive as to lead to the death of the patient in a few days, while at the other end of the chain are cases of so mild a character that there were only superficially ulcerating pustules, which came out in crops, thus protracting the disease as a whole for a considerable time, and generally accompanied by intense pruritus; these milder cases appear to correspond with Mr. Hutchinson's varicella prurigo. Between the two extremes are cases of all grades of severity. Comparison was made between the local and general gangrenous eruptions, and, among other things in common, it was shown that they both attack girls more than boys, and occur at about the same ages. The conclusions arrived at were—that the gangrenous eruptions are pathological accidents, so to speak, which in young children, especially when of tubercular constitution, might supervene upon any pustular eruption, although no doubt such a condition is much more common after varicella. Secondly, that the determining factor is probably a micro-organism derived from without, though cultivation and inoculation experiments could alone prove the

truth of this theory. Thirdly, that the initial lesions, both of the local and general gangrenous eruptions, present the same characters. (Lancet, June 18, p. 1233.)

DR. UNNA'S SPECIAL DERMATO-THERAPEUTICAL PREPARATIONS.

—Some of the special preparations recommended by Dr. Unna in his valuable paper on "The More Recent Improvements in the Therapeutics of the Skin" are manufactured by Herr Paul Beiersdorf, pharmaceutical chemist, 40, Wohler's Allée, Altona, Germany. The "gutta-percha plaster mulls" and the "salve mulls" are made up in pieces 1 mètre (39·37 inches) long by 20 centimètres (7·87 inches) broad; they have a surface of about $2\frac{1}{3}$ square feet. The amount of the medicament contained in each such piece is stated in grammes. Thus one of the chrysa-robin plaster mulls contains two grammes, or, in round numbers, half a drachm, in a piece; another plaster mull contains ten grammes—that is to say, about two drachms and a half—of tar in each piece. In all cases the amount of the base, adhesive or fatty, is practically nearly the same. In ordering these preparations it is necessary, therefore, to order not so much per cent. of the drug, but so much to each piece of plaster. The salve mulls may be had spread on one or both sides. Like the gutta-percha plaster mulls, they contain a stated quantity of the drug or drugs in the piece. Herr Beiersdorf also makes the glycerin-gelatin composition mentioned by Dr. Unna. The salve mulls are also made by Herr W. Mielek, 27, Dammsthorstrasse, Hamburg. (Dr. P. G. Unna, p. 296.)

ECZEMA.—*Resorcin in.*—Wyss (Der Fortschritt. Genf., 1886) repeats Andeer's recommendation of resorcin in the treatment of eczema. He uses the powder dissolved in oil, glycerine or vaseline, 1·0—5·0 in 25·00. Many cases of eczema of the nostril which had proved obstinate to other measures healed quickly. The effect of resorcin in cases of weeping eczema is to coagulate the serum, and by thus producing a firm antiseptic covering to promote a rapid skinning over. (Deutsche med. Zeit.) [According to Unna, the keratoplastic action of resorcin is due to its power of reducing or withdrawing oxygen.] (Dr. Brooke's Report, Medical Chronicle, July, p. 330.)

EMULSIONS IN SKIN DISEASES.—At the International Medical Congress, 1887, Dr. Valentine Knaggs, of London, proposed as a substitute for ointments the employment of emulsions, which, upon drying on the skin, form protective films. He had employed these dressings for the past two years with gratifying results in eczemas and other non-specific exudations. The inunction of the body with fixed oils has been found of immense service, but they are not adhesive, and exuding fluids readily escape from the

surface. There are two methods of rendering oily substances adhesive,—1. By adding to them resinous, gummy, or alkaline substances; 2. In making use of gums to combine or emulsify a fat with water. Adhesive preparations, unlike oils, tend to arrest skin-action. Thus tar, varnish, or collodion form an impervious covering. Ointments to which adhesive substances are added diminish skin-action, but do not abolish it. Well-made emulsions resemble milk or cream, are soluble in watery fluids, and are markedly adhesive, and are made by combining an ointment-basis with water, a vegetable gum, and a suitable antiseptic. Thus the formula preferred would read: *R.* Paraffine molle, ʒi ; pulv. gum acac., gr. clx; boracic acid, gr. xvi; aquæ, ad ʒii . Stir until emulsified. Bismuth, zinc, sulphur, or other medicament may be added as desired. Smeared over the skin, a film is formed, which is flexible and protective, and the antiseptics and medicaments have the best opportunity of exercising a beneficial influence. (*Therapeutic Gazette*, Sept. 15, p. 634.)

GLYCERIN-GELATIN PREPARATIONS.—*Their use in Skin Diseases.*

—The glycerine gelatines are distinguished above all the agents used for promoting the absorption of secretions, and especially in comparison with the pastes, by their adhesiveness, which constitutes a most useful addition to their other valuable characteristics. The most important of them is the zinc preparation, which finds a very extensive field of utility, no less as an independent therapeutic agent than as an auxiliary to the use of other agents. Slight superficial eczemas and erythemata, especially such as occupy the flexor surfaces of the joints, or are distributed over large tracts of the body-surface, can be treated by means of it both quickly, safely, and pleasantly. The preparation is rendered fluid in a water-bath, then painted on to the skin whilst still warm with a broad bristle brush, after which the layer is dabbed over with a flock of cotton-wool. By this means the layer is soon dried, and takes on the nature of a fabric. From places which are free from hair it can be stripped off in a single sheet on the following day, but from places which are covered with lanugo it must be washed off with warm water. I must ask you to bear in mind that a covering of this gelatine not only does not restrain the perspiration of the skin, but that it actually considerably increases it. You need not hesitate, therefore, if the case should call for it, to paint over a child from top to toe. A patient when so treated quickly notices the perspiration, which takes place through the covering, for he shivers more in his suit of glycerine gelatine than he would have done had he been left naked. Hence this cooling mode of dressing is strongly to be recommended for all erythemata caused by artificial irritants, such as the heat of the sun, or drugs, whether they be

accompanied by œdema or not, in acute erysipelatoid eczemas, and that class of diseases. (Dr. P. G. Unna, p. 297.)

HABITUALLY MOIST FEET.—This is found most frequently in such persons as live well and take little exercise. Also in young women of a somewhat nervous temperament, who indulge in the pernicious habit of frequent tea-drinking. Aside from its unpleasantness, the danger attending on wet feet is acknowledged, and it is also not rare for persons so affected to have their feet and legs icy cold for long periods of time. In the editor's experience, the best results of treatment have been obtained from the employment of foot-baths of a strong solution of extract of *Pinus canadensis* (Kennedy's) every night, and the use of powdered boracic acid, or salicylic acid mixed with lycopodium, oxide of zinc, or other inert powder, constantly applied inside the stockings. (Dr. Jamieson's *Periscope*, in *Edinburgh Med. Journal*, Sept., p. 285.)

HYPERKERATOSIS SUBUNGUALIS.—There is an abnormal condition of the nails of the fingers and toes known as onychogryphosis, in which the nail is raised from its bed by an accumulation of dry flakey epidermis, while at the same time it is thickened in its substance. This may be met with in various degrees. No cause can, as a rule, be discovered, but the symmetry shown by the affection stamps it as constitutional in origin. All methods of treatment so far suggested have turned out unsatisfactory. Hans v. Hebra, however, has placed an instance on record where all the finger and toe nails were so diseased, in which he succeeded in curing it. Aided by local anæsthesia, he insinuated under the nail, previously cut very short and from the free margin backwards, one of the thin platinum knives of Paquelin's thermo-cautery. In eighteen sittings, repeated once or twice a week, all the diseased tissue was removed, and the nail advanced in its growth over a sound bed. Six weeks later the nails had reached the finger tips. A year after, the man continued well. (Dr. Jamieson's *Periscope* in *Edinburgh Medical Journal*, Sept., p. 285.)

ICHTHYOL IN SKIN DISEASES AND OTHER AFFECTIONS.—In the *Chicago Medical Journal* for December, 1886, Zeisler reports his experience with ichthyol. Externally, in all forms of eczema it proved useful, the result in all but a few cases being favourable; according to the degree of acuteness, the remedy should be applied in the proportion varying from 5 to 30 per cent. In sycosis its effects were good in a majority of the cases; it was employed in the form of a 10 per cent. ointment, in conjunction with a soap of ichthyol. In acne vulgaris the results were not positive. In acne rosacea its favourable influence was undoubted. Internally, the remedy was given in about twenty-five cases, in

doses varying from three to fifteen grains thrice daily. In general, as the author states from his limited experience, it may be said that in all cases in which the rheumatic diathesis and dyspeptic ailments may be considered etiological factors ichthyol will have indirectly a favourable influence by removing these conditions. Independently of such predisposing causes, however, it acted well, in the author's experience, in a few cases of acne and acne rosacea in which it was prescribed. Possibly in some instances it may act, as suggested by Unna, by its contracting effects upon the cutaneous capillaries. Prof. Schweninger (Charité-Annalen, 1886) has, since 1883, employed ichthyol, chiefly in from 10 to 50 per cent. solutions, in rheumatism, lumbago, neuralgias, gout, and migraine, and finds that in relieving the pains accompanying these diseases it acts better than any other known medicament. It also proved useful in the treatment of open wounds and in gangrenous sores, applied on cloths or lint, and relieved pain about as effectually as the other well-known remedies. In chronic eczema a 10 per cent. ointment with oxide of zinc was employed, and in keratoses, where the epidermis had been previously removed by maceration and soap, it was found to cause healing rapidly. Internally, in the form of capsules, containing 10 per cent. solutions in ether, alcohol, glycerine, or water, it also proved valuable in various skin diseases, malaria, and East Indian fever. (International Journal of Med. Sciences, April, p. 574.)

IMPETIGO CONTAGIOSA IN CHILDREN.—Dr. Zit of Prague, in an interesting paper, considers that over-crowded dwelling-houses exert an important influence on the origin of this disease, and says that the most of his cases occurred in families in whom the space was too confined for the number occupying it. He cannot decide if the character of the soil exerts any effect, but quotes Beach in Wooster for an account of an epidemic in which the complaint prevailed in a street which had been built on soil previously a morass. As regards the contagion, this is most marked when the eruption occurs on the scalp, and is spread from one to another of the family by using the same comb. In a note he adds, "It is undeniable that the hygiene of the hair in children receives too little attention; parents should be warned that many infectious skin diseases are spread by using dirty combs and brushes. He is convinced that many cases of premature baldness are thus communicated from older persons to children, and, therefore, hairdressers should employ clean brushes, etc., for each person." As to duration, unless proper means of treatment are resorted to, it may last months. Brilliant results have in his experience followed the application of a 1 in 1000 corcsive sublimate lotion. (Dr. Jamieson's Report in Edinburgh Med. Journal, Aug., p. 189.)

INFLAMMATION OF HAIR FOLLICLES WITHIN THE NARES.—

For this painful, annoying, and sometimes very obstinate disease, which is often called eczema, Dr. Hardaway, of St. Louis, has found the best treatment to be the administration of cod-liver oil with hypophosphites, and the local application of glycerine, to which is added two drachms of Squire's glycerole of the subacetate of lead (*Jour. of Cut. and Ven. Diseases*, 1886). Sometimes he commences the treatment of a case by giving one-tenth-of-a-grain doses every third hour of the sulphide of calcium. The glycerine is to be applied with a camel's-hair brush both to the inside and to the outside of the nose; the parts are to be fomented several times a day, the hairs are to be plucked from the inflamed follicles, and when suppuration occurs the pustules are to be lanced. When the pain and tension have subsided, the following ointment is to be used:—℞. Squire's glycerol. plumb. subacetat., ʒss; glycerin., ʒjss; ung. aq. rosæ, ʒj; ceræ albæ, q.s. M. The formula for Squire's glycerole is as follows: Acetate of lead, 5 parts; litharge, $3\frac{1}{3}$ parts; glycerine, 20 parts, by weight. Mix and expose to a temperature of 350° F., and filter through a hot-water funnel. (*New York Med. Journal*, Feb. 19, p. 221.)

INSECT BITES.—*Applications for.*—Bernbeck has written a laborious essay upon this frequent and often insignificant ill, and proposes the following as the best applications which are known to him:—Elastic collodion, 10 parts; salicylic acid, 1 part.—Also: Elastic collodion, 1000 parts; bichlorid. hydrarg., 1 part. To be used as soon as possible after a bite. (*Therapeutic Gazette*, Sept., p. 620.)

LEUKOPLAKIA BUCCALIS.—Professor Schwimmer (*Monatsh. für Prakt. Derm.*) has found this affection of the tongue resist all the remedies he has tried. He has, however, found that the ulceration and fissures of the mucous membrane of the tongue were rendered less painful by the application with a brush of—Papayotin, 0·5—1·0; dist. water, glyc., āā 5·0. (*Medical Record*, May, p. 212.)

LICHEN CIRCUMSCRIPTUS.—*Treatment.*—The very common affection of the skin of the thorax seen in persons who sweat profusely and wear thick woollen clothing, known variously as eczema circinatum, lichen circumscriptus, &c., forms the subject of some remarks by Brocq. He states that Besnier treats the affection by attending to the general health, washing the part with soap and water, avoiding woollen clothing, the application of powder, and the insertion of a piece of soft linen between the skin and the under-shirt. If it persist after this treatment, he prescribes a sulphur ointment. (*Practitioner*, Sept., p. 213.)

LIPS AND MOUTH.—*A Form of Inflammation of the Lips and Mouth usually attended by some Disease of the Skin.*—At the Royal Medical and Chirurgical Society, on June 14th, 1887, Mr. Jonathan Hutchinson contributed a paper on a form of Inflammation of the Lips and Mouth, which sometimes ends fatally, and is usually attended by some disease of the skin. The paper contains the description of a disease (not, it is believed, previously recognised) in which superficial ulcerations occur in the lips and in various parts of the mouth, followed sooner or later by some form of skin disease, and tending to a fatal termination. The form of skin disease may vary, but the hands and feet are the parts usually affected, and the nails are especially prone to suffer. In some instances the eruption may consist of bullæ which are followed by free papillary outgrowths. The patients attacked are usually in middle life, or in early senile periods. No special antecedents can be alleged as the probable cause of the malady. Unless checked by treatment, the disease appears to run its course in about six months, producing death by exhaustion. There seems reason to believe that opium given in repeated doses will cure it, and that there is, at any rate in some cases, no tendency to relapse afterwards. All the best marked cases as yet observed have occurred in males, but in several milder ones the patients were women. Of the most characteristic, two were master tanners, one was a farmer, one a clergyman, and one a gentleman of no occupation. All these resided in the country. Careful inquiry has failed to support the suspicion that the disease might perhaps be due to contagion from animals. Of these five cases, two ended fatally and three in recovery. The patients who died were those first observed, and since the discovery of the signal efficacy of opium no case has ended in death. The observation as to the efficacy of opium was simultaneously made by the President of the Society, Mr. Pollock, and by the author, two different patients being at the same time under their separate treatment, and recovering under this drug. Since that every case has yielded, if the dose of opium were sufficiently pushed. In one, however, the disease did not yield quickly, and for more than a month seemed likely to end in death. As regards permanency of cure, in one case the patient is known to be quite well four years after his recovery, in another there is reason to believe that such is the fact, and in a third a period of two years has elapsed. In two of the milder cases, occurring in younger patients, the disease has repeatedly relapsed. A great variety of remedies had been tried without benefit before the use of opium was resorted to. In no single case has there appeared to be any tendency to spontaneous improvement. In all the cases the inflammation of the lips and mouth took definite precedence of the skin symptoms, and in

some the latter were very slight. It is not known that any case has as yet been obtained amongst the poorer classes of society. The author desired to abstain for the present from expressing any detailed opinion as to the causes or nature of the malady. He would, however, venture to suggest that it is allied to other forms of disturbed health attended by skin disease and occurring in early senile periods, such as certain peculiar varieties of psoriasis, pemphigus, lichen planus, and pityriasis rubra. (Lancet, June 18, p. 1233.)

LUPUS ERYTHEMATOSUS.—*Treatment.*—Brocq (Journ. de Med. de Paris, 17th Jan., 1886) has had good results from the application of a mixture of equal parts of wine-vinegar and yolk of egg, which was recommended to him by a warder at the Hospital St. Louis. The mixture is beaten up, macerated for twenty-four hours, and then painted on the skin at night for two to four consecutive days. A more energetic procedure consists in applying to the skin at night a mixture of wine-vinegar and hard-boiled egg, allowing it to remain on over night, and in the morning washing it off with soft soap. (Dr. Brooke's Report, Medical Chronicle, July, p. 329.)

MEDICATED GELATINES.—Unna (Monatsh. für Prakt. Derm.) recommends medicated gelatines of two consistencies: a soft and a hard one. He takes them as a basis for the incorporation of various medicaments with medicated zinc gelatine. The soft medicated zinc gelatine is composed of oxide of zinc, 15 parts; gelatine, 15; glycerine, 25; water, 45. The hard zinc gelatine contains oxide of zinc, 10 parts; gelatine, 30; glycerine, 30; water, 30. Certain ingredients tend to prevent the gelatine from solidifying; these are carbolic acid, salicylic acid, resorcin, naphthol, creosote, sulphate of potash, and must be incorporated with hard zinc gelatine. (The gelatines when used are applied with a brush when fluid, and allowed to harden on the skin.) They are particularly useful in pruritus, erythema, rhagades, and acute eczema, when there is no exudation. For many cases of inflammatory acne he recommends a zinc gelatine, with 20 per cent. sulphur, or 5 to 10 per cent. resorcin. (Medical Record, May, p. 212.)

ONYCHIA MALIGNA AND TUBERCULOSIS.—True onychia maligna is, according to E. v. Meyer (Archiv. f. Path. Anat. u. Physiol. u. f. Klin. Med.), that condition in which a single nail is affected, and the inflammation refuses to yield to well-directed treatment. It is dependent for its malignancy upon tubercular infection following some injury, which may be very slight. For two or three weeks the patient experiences pain in the affected part; then the inflammation begins under the free edge of the nail;

the pain increases so that sleep is disturbed ; the part is red and the nail-bed swollen ; an ulcer develops that creeps along the side of the nail till it reaches the lunula or root, and at last the nail falls off. The ulcer is usually covered with bloody pus, and resembles a diphtheritic ulcer without its phagedenic character. The ulcer remains stationary for an indefinite time in spite of internal and external treatment—it may be for three or more years—without attacking the periosteum and bone, or spreading beyond the ungual phalanx. The treatment should consist in obtaining a clean, nicely granulating wound surface by using, locally, corrosive sublimate, carbolic acid, and iodoform, and giving remedies internally to build up the constitution of the patient. (New York Med. Journal, Sept. 3, p. 278.)

PASTES IN CUTANEOUS THERAPEUTICS.—According to Martin's experience (*Deutsche Medicinische Wochenschrift*, Dec. 30, 1886), better results follow the treatment of inflammatory skin diseases, especially those of an eczematous type, by means of pastes, than are to be secured by other methods. What is commonly known as Lassar's paste—*Ac. salicylici*, gr. x ; *pulv. zinci oxidi*, *pulv. amyli*, āā ʒij ; *vaselin*, ʒij—was employed in the author's cases. It may be advantageously used in all forms of eczema. Where the parts affected permitted—as, for example, about the hands, arms, legs, &c.—the skin, after a thorough soap and water washing, is coated over with a thick layer of the paste, this covered with a thin film of clean cotton, and then a bandage of gauze applied. This dressing may remain on for several days, and in some instances even a week or longer. Rarely more than the repetition of three such dressings is necessary for a cure. When the eczema is upon the face, for obvious reasons the above method of application is impracticable, and the paste is, therefore, simply smeared on at frequent intervals. About the angles of the ears and nose, after applying the paste, a small thin film of cotton may be stuck on over it with better effect. (*International Journal of Med. Sciences*, April, p. 578.)

PHTHEIRIASIS PUBIS.—To kill the crab-louse (*Journ. de Med. et de Chir. Pract.*) it is better to use a 5 per cent. ointment of calomel than ordinary blue ointment. The following preparation, much used in Vienna, may be employed :—*Petroleum*, *balsam of Peru*, āā 15 parts ; *oil of laurel*, 1 part. This should be washed off after three hours. Another efficient method is to bathe the parts twice a day with a mixture of a teaspoonful of a 1 per cent. alcoholic solution of corrosive sublimate and a pint of water. None of these applications kill the nits, but vinegar will, as it softens the adhesive chitin by which the ova are held on the hairs, when they should be detached. (*New York Medical Journal*, Aug. 20, p. 226.)

PRURITUS ANI.—*Treatment by Suppositories.*—In a paper read before the Section of Dermatology at the International Medical Congress, at Washington, Sept. 1887, Dr. Shoemaker said: Pruritus ani is often due to an oedematous condition of the tissues around the anus. In this event antipruritic lotions and ointments can be of only temporary utility, and occasionally aggravate, instead of alleviating, the patient's sufferings. A suppository containing ten grains of powdered geranium or ten grains of quercus alba will dissipate the oedema and banish the itching. Pruritus vulvæ and general pruritus are occasionally traceable to disorder of the anal nerves, and can then be almost magically relieved by the employment of suppositories composed of half a grain of opium and half a grain of extract of belladonna, or half a grain of opium and five grains of chloral; ten grains of quinine and half a grain of extract of cannabis indica is also useful. Arsenic and antimony are of incalculable benefit in many cases of psoriasis, but they frequently disorder the stomach so much that their administration is suspended before the eruption is removed, and some less potent but less irritating remedies substituted. My experience has convinced me that to discontinue their use under such circumstances is an error. They can be given with advantage in the form of suppositories. Care must be taken, however, to have them evenly divided throughout the mass, and to employ at least one-twentieth of a grain of arsenious acid or arsenite of sodium in each suppository. One to be used from one to five times a day. (Lancet, Oct. 1, p. 653.)

PRURITUS VULVÆ.—*Treatment.*—Mr. Francis Taylor Simson reports the case of an elderly lady, complaining of great irritation of the vulva and perineum. She was suffering from diabetes, but although under treatment the specific gravity of her urine decreased from 1049 to 1026, yet the pruritus increased in severity. In spite of all that could be suggested by myself and many of the best London consultants, life became almost unbearable. Directly she became warm in bed the irritation would commence. She would scratch herself "almost to pieces," and would frequently leave her bed half-a-dozen times during the night to sit in a bath of cold water. She tried alkaline baths, hydrocyanic acid, black wash, chloroform liniment, &c., without avail. On July 28th she came up from the country to see me, although she felt it might be in vain. I then gave her the following ointment: Cocain., 15 g.; aquæ dest., q.s.; lanolin., $\frac{1}{2}$ oz.; to be used every night, and lotio hydrargyri nigra to be applied in the morning after bathing. Since she used this ointment the irritation gradually decreased, until it entirely left her, and long and healthy sleep returning has made life again worth the living. (Lancet, Sept. 10, p. 520.)

Pruritus Vulvæ.—*An Application for.*—Ménière (L'Union Médicale, June 4, 1887) advises the use of the following: R. Zinc. oxid., $\mathfrak{z} 1\frac{1}{2}$; potass. bromid., $\mathfrak{z} 2\frac{1}{2}$; ext. cannabis indic., gr. 30; glycerite of starch, $\mathfrak{z} 7\frac{1}{2}$. To be preceded by cold bathing. When complicated by acne, applications of very cold infusion of black tea are useful. (Medical News, July 23, p. 102.)

PSORIASIS.—*Auspitz's Method of Treatment.*—My object here is to give my experience of Auspitz's method, which consists in creating an artificial cuticle or film with certain substances dissolved in chloroform or gutta-percha. This cuticle is made by dissolving one part of purified gutta-percha in ten parts of chloroform, which forms an excellent medium for fixing the application, as it adheres firmly and without alteration for several days. It is thin, chemically neutral, and does not cause tension or pain. Dr. Payne has further illustrated the subject in the last number but one of the St. Thomas's Hospital Reports. He proposes a solution of chrysarobin (20 grains) in a fluid ounce of liquor gutta-percha. This is to be painted with a brush on the affected places (from which the scales have been removed as much as possible by soft soap) once or twice a day, so as to form a perpetual film. The action is more rapid, and there is no staining of the clothes. The principle is capable of variation in detail, but Dr. Payne claims for the plan that it is specially neat and cleanly for the purposes of private practice. Chrysarobin thus applied, adds Dr. Payne, supersedes all other remedies. Perhaps this last assertion is too absolute, as there are not a few people who instinctively dislike any varnish which *seals up* the skin and shuts in the natural secretion of the smallest cutaneous area. Otherwise, I can heartily commend Dr. Payne's modification of Auspitz's method used within narrow limits. The principle has already been tested in the treatment of eczema. Under the protective guardianship of a gelatine enamel, irritation subsides, and a healthy epidermis is developed within a few days. Here everything depends upon the temporary exclusion of air, with all its impurities of dust and tribes of germs. (Dr. J. Kent Spender, Lancet, Aug. 20, p. 367.)

Psoriasis.—Guibaut (Les Nouveaux Rémèdes) recommends the following in psoriasis: Sodii arsen., gr. $\frac{1}{60}$; ext. gentian., gr. iss. In pill form. Two or three pills after each meal. Also frictions twice daily with adipis, $\mathfrak{z}iii$; acid. pyrogallic., $\mathfrak{z}iiss$ to $\mathfrak{z}iv$. Also a thorough cleansing with soap every two days. (Therapeutic Gazette, March, p. 216.)

RINGWORM OF THE BODY.—*Treatment by Tincture of Iodine.*—The treatment of body ringworm is usually as satisfactory as that of the head is troublesome. If the patch is painted once or twice with tincture of iodine, and well scrubbed with soft soap

the disease is cured. To make sure, the patient may be ordered a white precipitate ointment to be rubbed in once a day. M. Vidal writes me that since 1861 he has preferred, to all other treatment which he has tried, painting with tincture of iodine. He applies iodine over a space extending three-eighths of an inch beyond the ring every morning for three days, then applies it twice afterwards at intervals of two days. He finds two applications usually sufficient. If any irritation is caused he applies it after an interval of two days. M. Besnier adopts a somewhat similar plan. He rubs the patch very firmly with cotton which has been soaked in tincture of iodine, applying this treatment both in the erythematous and in the vesicular form. He usually finds one application sufficient. A second friction is necessary when the peripheral zone has not been treated sufficiently actively. (Dr. George Thin, Practitioner, Aug., p. 84.)

SEBACEOUS CYSTS.—*New Method of Removal.*—Beck has modified Lauenstein's technique in the following manner: At the base of the artheroma he makes a very small incision, just big enough to allow the insertion of a small pair of Cooper's scissors, and with this he divides the tumour at its base. Then he enters a very small forceps (Kornzange) and cuts out from the loose cyst a small piece. The contents may now be evacuated, and the sac may be pulled out of the very small wound with the forceps, like an ovarian cyst. (Roser, Marburg.) (Mr. Carl Frese's Report in Med. Chronicle, Aug., p. 420.)

WINTER PRURIGO.—*Treatment.*—The treatment of this troublesome affection is not very satisfactory. If the patient suffers from dyspepsia and debility, we naturally treat him for these symptoms, but with little effect as regards the itching. The only true indication seems to be to smoothe and protect the skin as thoroughly as possible. Warm clothing is, of course, essential; but, since any woollen garments which are at all rough often irritate the skin, some soft, pure woollen must be found. It should be remembered that much of the so-called "merino" clothing is more than half cotton. Next, some physical protector in the form of an oily or viscid lubricant should be applied to the skin. This, by soaking into the epidermis, makes it a much more perfect non-conductor of heat, and thus the peripheral nerves are shielded against changes of temperature. Glycerine is the favourite substance, and in Case 3 the patient thought nothing else did him any good; but patient No. 2 preferred vaseline. The glycerine may be used pure, or diluted with an equal part of water or camphor-water. Probably free inunction with olive-oil would be better still; but I have not been able to induce patients to give it a fair trial. At first I used lotions containing lead, carbolic acid, and glycerine, but afterwards came

to the conclusion that the last was the only useful part of the prescription. In certain cases, especially when the irritation is worst at night, small doses of chloral hydrate are very useful. In Case 2 I gave fifteen grains every night for a time, and believe that the benefit attributed to local remedies was chiefly due to this. For obvious reasons, it is a remedy not to be used hastily or continued too long; but the benefit is not confined to the night, as the nerves are permanently soothed. (Dr. J. F. Payne, p. 316.)

WHITLOW.—*Treatment of the Milder Forms of.*—The less severe forms of furuncular inflammation may be aborted in many cases, according to Dr. Weiss (Medical Record, Nov., 1886), by the inoculation of resorcin, a plan which he has employed, as follows: A number of shallow parallel incisions about one-quarter of an inch long are made in and around the lesion and through the integument, pain being prevented by the use of a twenty per cent. solution of cocaine and ten per cent. resorcin. Lanolin salve is then applied in a very thick layer to the scarifications. The entire part is enveloped in a strip of lint, which, in turn, is to be thoroughly saturated with the salve, and over this a layer of gutta-percha tissue, absorbent cotton, and moist gauze bandage may be applied in the order mentioned. Dr. Weiss reports a number of cases in which the employment of this mode of treatment in twenty-four hours produced complete cessation of pain and arrest of inflammation. Of course it can hardly be expected that this mode of treatment would operate in the more serious cases of periosteal or tendinous inflammation, but it seems well worthy of trial in the less grave forms of phlegmonous inflammation. (Therapeutic Gazette, January 15, p. 34.)

SYPHILITIC AFFECTIONS.

GONORRHOEA.—*Treatment by Antiseptic Irrigation.*—Dr. Brewer, in an article in the Journal of Cutaneous and Genito-Urinary Diseases for May, gives his results of treatment as follows. In conclusion, I think it may be fairly stated: 1st. That in uncomplicated cases of acute gonorrhoeal urethritis, treated by prolonged and frequent irrigation with bichloride of mercury, recovery may be expected within two weeks; that this period may be considerably shortened by the early inauguration of treatment, by absolute rest, and by the avoidance of stimulants; that it may be indefinitely prolonged by irregularity in treatment, by inordinate physical exertion, and by indulgence in alcoholic and venereal excesses. 2nd. That the retrojection of a hot solution of bichloride possesses all the advantages of the former procedure, and in addition causes a more rapid subsidence of the

inflammatory symptoms, a greater feeling of comfort to the patient, and is attended with less annoyance and trouble. 3rd. That in cases of acute non-specific urethritis, the favourable influence of each of these methods is strikingly apparent. 4th. That in cases of chronic purulent urethritis, no agent produces such rapid and permanent improvement as irrigation, especially when combined with astringents and heat. 5th. That the percentage of complications occurring in cases treated by these methods is far below that observed when the ordinary methods are employed. (Medical News, July 9, p. 43.)

SYPHILITIC ERYTHEMA NODOSUM.—Dr. R. W. Taylor, having given a comprehensive description of an eruption which Mauriac has called Syphilitic Erythema Nodosum, goes on to say: I am utterly opposed to the names of skin diseases, such as lichen, eczema, psoriasis, lupus, &c., with the adjective syphilitic being used to signify eruptions due to the diathesis, since nothing but confusion and inaccuracy can result from such a nomenclature. There is every reason against and none in favour of calling this eruption by Mauriac's title. It is a precocious gumma presenting certain resemblances in its mode of invasion, course, and appearances to the erythema nodosum. The clinical history of the simple eruption is different from that of the specific. In the latter there is the history of recent infection, and usually a co-existence of declining or active syphilitic manifestation. The febrile symptoms of the early gummata are usually not as pronounced as those accompanying the simple eruption, nor is its invasion quite as sudden and rapid as in erythema nodosum, it is more aphlegmasic. In the syphilitic eruption the nervous symptoms are usually much more severe than in the simple form. Should doubt exist in the mind of the observer early in the history of the eruption, as the evolution progresses, and with the history of the case before him, with its more chronic and aphlegmasic course, and its rebelliousness to simple treatment, it will soon be dispelled. The fact that these tumours break down and take on the appearances and run the course of typical gummata, to my mind, proves beyond doubt their syphilitic origin and nature. (Dr. R. W. Taylor, p. 334.)

SYPHILITIC SORE THROAT.—℞. Hydrarg. bichlor., gr. iv; solve in spirit, rectif., ℥ii; decot. cinchonæ, ℥ii; mel rosæ, tinct. myrrhæ, āā ℥ii. M. Et ft. gargarisma. This prescription appears in the Institutes of Surgery of Sir Charles Bell, and it would seem difficult to improve upon this formula for a mercurial wash for the ulcerated forms of syphilitic sore throat. In prescribing it the patient should be directed to use a small quantity at a time, and to note its effects. If it prove to be too severe, he should add an equal quantity of water to each dose,

which might be limited to a tablespoonful. If this prove to be irritating, it may be again diluted, until at last it can be easily borne. The patient should be encouraged to use the remedy, as far as practicable, in the form above given. If he is compelled to begin with the dilutions, he can be induced, after he is in a measure accustomed to the effects, gradually to return to the original strength of the remedy. (*Some Old-Time Prescription*, Therapeutic Gazette, Sept., p. 618.)

AFFECTIONS OF THE EYE AND EAR.

ALBUMINURIC RETINITIS.—*Prognosis in.*—An interesting discussion was raised as a digression at the last meeting of the Ophthalmological Society, on the subject of the prognosis of albuminuric retinitis. Dr. Angel Money, who gave the turn to the discussion, said that in his experience the average duration of life was to be measured by months. This view was supported by Dr. J. Anderson, who had instituted an inquiry in the matter, and came to the conclusion that the longest duration was thirteen months and the average six months. Dr. Stephen Mackenzie did not contest the main issue, but narrated some cases which went to show that life might be prolonged even for years. Indeed, he mentioned one case in which considerable progress towards recovery took place, so that after a time the ophthalmoscopic changes were not very noticeable. Mr. Marcus Gunn agreed with the view that the duration of life was not usually long. Mr. Nettleship considered that if the changes in the eyes were associated with renal disease and pregnancy, then, provided a safe delivery was accomplished, the prognosis was much more favourable than in ordinary cases. Mr. McHardy had seen a case in which the patient lived for many years after the detection of the albuminuric retinitis. Dr. W. J. Collins thought the prognosis more favourable when mere hemorrhages existed, but less hopeful if other retinal changes had developed. (Lancet, Oct. 29, p. 877.)

ASTRINGENTS IN EYE DISEASES.—*Evil Results from the Use of.*—Putting aside nebulae and obvious injuries, I am convinced that the beginning of astigmatism, in a considerable number of cases, may be sought not in an asymmetrical development of the cranium, though that has its share, but in a temporary ulceration or infiltration of the cornea, which may pass away, leaving scarcely any visible sign of its existence. The order of events is somewhat as follows:—A marginal keratitis gives rise to a red eye, which is called conjunctivitis, and treated by nitrate of silver drops and a sulphate of zinc lotion. The infiltration of the cornea spreads more and more towards the centre, and when

(perhaps owing to a fortunate intermission of the treatment) healing at length takes place, the channels on two sides of the cornea are narrowed, growth is no longer symmetrical, the eye becomes astigmatic—acuteness of vision is lowered—scarcely enough to attract attention, but sufficiently to throw additional strain on the accommodation. Education is begun; work induces hyperæmia of the conjunctiva or blepharitis (two common sequences of refractive errors), is again treated by astringents, and made worse. The child complains of headaches and inability to do his tasks, is given some rhubarb or punished for inattention, and finally is discovered to be astigmatic, and is condemned to spectacles for the rest of his life. The danger of visual impairment by more or less dense nebulae, or by faulty curvature (which need not always be even regular), is in proportion to the severity of the infiltration or its duration. The aggravation of keratitis by astringents is sometimes so marked that a mere cessation of the treatment is the commencement of convalescence. The more we study the pathology of eye diseases, the less respect we have for astringents. Blepharitis, hordeola, hyperæmia of the conjunctiva, phlyctenular conjunctivitis when recurrent, are generally associated with hypermetropia, and require convex glasses. All purulent or muco-purulent affections require antiseptics—boracic acid, dilute perchloride, and cleanliness. The sulphates of zinc, of alum, of copper, nitrate of silver, and acetate of lead may be banished from the nursery pharmacopœia. The good they effect at the best is but temporary, the evil they may leave or intensify may be permanent. (Mr. Edgar A. Browne, Liverpool Med.-Chir. Journal, July, p. 253.)

CEREBRAL ABSCESS THE RESULT OF EAR DISEASE.—*Diagnosis.*—

The following important remarks, amongst others, were made by Professor Greenfield at a meeting of the Glasgow Medico-Chirurgical Society on Feb. 11th, 1887, when a discussion on the pathology and treatment of Cerebral Abscess was introduced by Dr. Wm. Macewen. Evidently those cases in which the symptoms are least urgent and striking are those in which we may expect the best results from treatment, if we can make the diagnosis during the latent stage or early in the course of the more pronounced symptoms. Of those general symptoms which may aid the diagnosis from those diseases likely to be mistaken for it, *rapid wasting* is very important. This has been very marked in some of my most typical cases. As to *temperature*, I have said that it may not be elevated during the time that the patient is under observation, and in some cases, notably in one of trephining which I have recently published it was subnormal throughout. Next, with regard to *opic neuritis*. It is too generally assumed that optic neuritis is constant in cerebral abscess. Here I must absolutely join issue with my friend Dr. Gowers, whose views Mr. Barker

seemed to endorse. Briefly stated, the facts at present recorded are, I believe, insufficient to enable us to draw any decisive inference either from the absence or presence of optic neuritis. It was absent in two of my cases which were carefully examined from time to time during life and post mortem, and in one case was unilateral, and appeared to commence only during the period of more urgent symptoms. Hence I can state absolutely that it is not constant. Moreover, there is no doubt that it may be present in cases of meningitis without abscess. It will be very desirable, in order to settle this question, that some aural surgeon should examine the eyes of a long series of cases of chronic suppurative otitis, in order to determine what conditions are present. Next, as to *localising* symptoms. These are usually absent, and when present, may be misleading. Thus the headache may be frontal when the abscess is in the cerebellum. Localised headache or tenderness on percussion may, however, be present. In the recent case of temporo-sphenoidal abscess already cited the headache was frontal, but the patient has stated since recovery that he had much more pain on the left than the right side. In that case also localising symptoms due to nerve pressure were present in a rare combination and degree. It is sometimes suggested that the presence of tenderness and perhaps swelling in the mastoid region may indicate especial involvement of the mastoid antrum and cells, and consequent probability of extension of disease to the wall of the lateral sinus. Curiously enough, in those cases which I have seen where this involvement occurred, there was neither tenderness nor oedema. It may be concluded from these observations that I regard the diagnosis of cerebral abscess, when latent and in the best position for cure—viz., in the temporo-sphenoidal lobe, as at present difficult; and if this discussion should have, as its sole result, a greater precision in diagnosis at an early period, it will be a result of the greatest value. (Glasgow Medical Journal, Aug., p. 125.)

Cerebral Abscess due to Ear Disease.—The following conclusions are appended to an exhaustive article on the diagnosis and treatment of Cerebral Disease, by Dr. P. McBride: (1) That in a case of chronic middle ear suppuration, whether the mastoid region be tender or not, opening the mastoid antrum should not be too long delayed if deep-seated pain in the ear be complained of, and if the general symptoms point to head mischief. (2) That in advanced cases we should attempt to arrive at an exact diagnosis as to the nature of the intracranial mischief, with a view to operative interference. (3) That we can in most cases detect sinus-phlebitis from the presence of pyæmic symptoms and from local manifestations. Thus, if the lateral sinus be involved, the region of the jugular vein will often be found tender and occasionally corded; if the cavernous sinus be at

fault, we should expect œdema of the retina, and around the eye, perhaps also exophthalmus (for further information on this point I must refer to special treatises). (4) That having excluded sinus-phlebitis the diagnosis may be said to lie between diffuse meningitis and localized abscess. (5) That the situation of the intracranial suppuration will probably be behind the tentorium if bone conduction be lost, i.e., if the auditory nerve is involved. That, in my opinion, this is also more likely to be the case when there is marked inflammation of the mastoid (i.e., its external and posterior part), than when the pain seems only to proceed from the tympanum; but I have been able to obtain no definite proof of this. The results of aural examination must, of course, be taken together with the general symptoms in localizing the brain lesion. (6) That the most common seat of localized abscess and starting point of suppurative meningitis is near the roof of the tympanum. (7) That we cannot in most cases distinguish positively between localized and diffuse suppuration; but that in cases where pulse and temperature are subnormal, the probability is in favour of localized abscess. (8) That the point chosen for opening the skull in otitic cerebral abscess should be just above and in front of the osseous meatus. (9) That such an operation may save a number of cases of localized abscess, and may possibly benefit some in which the suppuration is more diffuse. (10) That the propriety of exploring the cerebellar region is not so clear, and that this operation should only be undertaken when the presence of pus behind the tentorium is almost certain. (Edinburgh Med. Journal, June, p. 1099.)

ECTROPION.—*Argyll-Robertson's Operation for.*—Ectropion has been, and is still, one of the most difficult of all the deformities of the eyelids to treat successfully; and yet, owing to the great disfigurement produced by it, as well as the annoyance it causes in other ways, it is one urgently calling for treatment. Argyll Robertson, in 1883, published his account of "A New Operation for Ectropion;" his experiences of it at that time only extended to five eyelids, in two of which he could not state the result. As the operation seems to be one of real value, and as so few cases have since been published, I think it may not be out of place to mention those I have done or assisted at, and also to describe certain modifications in the method which I have found useful. The operation is usually performed as follows: A suture with two needles; a piece of sheet lead, one inch long and a quarter of an inch broad, curved to suit the shape of the globe; and a piece of medium thin india-rubber drainage-tube, are required. The needles are passed through the border of the lid from skin to conjunctiva, and out again through the inferior conjunctival *cul-de-sac* to the skin, an inch or so below the margin of the lid. The punctures near the lid-border are about half an inch apart,

and the counter-punctures below about a quarter of an inch apart. The piece of lead is then slipped under the two threads inside the lid, between them and the palpebral conjunctiva, and the drainage-tube is passed under the external loop of suture near the margin of the cornea. The suture is then drawn tight and tied over the lower end of the piece of draining-tube. As the suture is tightened, the border of the lid is bent inwards over the edge of the leaden plate, and the elasticity of the drainage-tube keeps up a constantly applied pressure for from five to ten days. When the apparatus is removed the lid is found to have recovered its normal position, either wholly or in great part. Where the eversion is extensive, occupying nearly the whole margin of the lid, I have obtained good results by applying a double apparatus, that is, two sets of sutures and two pieces of drainage-tube over the one piece of lead. By this means a more complete command is obtained over the eyelid, and the pressure, being more evenly distributed, need not be excessive on any one point. In the earlier operations I experienced considerable difficulty in keeping the sheet of lead in its place beneath the sutures. Dr. A. S. Patton, the house-surgeon at St. Mark's Hospital, suggested making holes in the lead near its inferior margin. Through these the sutures are passed from within outwards, before being carried through the inferior *cul-de-sac* of the conjunctiva. The lead is thus kept in perfect position, and the *technique* of the operation simplified without any corresponding disadvantage. In most cases I have found it necessary to tighten the sutures from time to time, as the lid moulded itself to the lead; this was effected by lifting the loop of suture near the margin of the lid with a strabismus-hook, and passing small rolls of cotton wool under it. (Mr. Arthur Benson, Dublin, British Med. Journal, May 28, p. 1155.)

Ectropion.—[For an account of Mr. Davies-Colley's Operation for the cure of Ectropion, see page 341 of this volume.]

FRANKLIN'S SPECTACLES FOR USE AFTER CATARACT EXTRACTION.—At the Ophthalmological Society, on May 5th, 1887, Mr. Brudenell Carter showed a pair of Franklin's spectacles for use after cataract extraction. They were made by cementing two small semicircular plano-convex lenses upon an oval of plane glass. Thus, both near and distant vision was afforded, and the spectacles were not heavier than ordinary spectacles. Messrs. Baker, of 244, High Holborn, were the makers. (Lancet, May 14, p. 983.)

GLAUCOMA.—*Treatment*.—With regard to treatment, the indications in secondary, consecutive, and traumatic glaucoma are clear enough. We must, whenever possible, remove the cause of disaster. A broken-up lens that blocks the angle of the

chamber or presses upon the iris must be let out; the dislocated lens must be extracted, and tension after capsular operations treated by paracentesis. Adhesions with ulceration require iridectomy; and the same operation must be performed whenever glaucoma complicates iritis, irido-choroiditis, and excluded pupil. As to cases of simple and inflammatory glaucoma, it has been very generally taught that all the resources of the Pharmacopœia are powerless to cope with these maladies—an assertion hardly, however, in accordance with facts; for just as a sudden fright, probably by dilating the pupil, may cause or precipitate an attack of glaucoma, so will eserine, by inducing an opposite condition, avert it. Just as anxiety and prolonged vigils may cause increased tension, so will morphia or other hypnotic, if it ensure profound sleep, abort it. Just as a rise in blood pressure from excitement and derangement of the sympathetic and fifth nerve may provoke excessive secretion, so will medication, such as blood-letting, ice, or hot fomentations, elaterine, eserine, pilocarpine, and large doses of quinine (10 grains, Mittendorf), tend to stave off an attack or mitigate its severity. I do not say that such remedies will avail in a severe case, cure or prevent recurrence in slighter ones, or avert gradual deterioration of sight in any; but there is no doubt that the disease may be kept at bay for a time by judicious medication, and it would be unwise to ignore the value of such remedies when from any cause operation is postponed. (Dr. C. Bell Taylor, p. 346.)

HEREDITARY OPTIC ATROPHY.—At the Ophthalmological Society, on Oct. 20th, Dr. S. Herbert Habershon read a paper on Hereditary Optic Atrophy. After briefly referring to the early cases of hereditary amblyopia reported in the pre-ophthalmoscopic period, he gave a short summary of Leber's description of the disease founded upon the cases of fifty-five individuals in fourteen families. The disease was confined almost exclusively to the male members of the family, appearing commonly at or about the age of puberty. It consisted of a central amblyopia, coming on usually with suddenness, and simultaneously, or nearly so, in the two eyes. The failure of sight progressed up to a certain point a few months or so after the attack commenced, and there remained stationary, without improvement and without manifest deterioration. The fields of vision were never contracted at the periphery, but presented in most cases a central scotoma, more or less absolute. Colour sense was abolished or much diminished. There were no symptoms of any importance. Headache frequently accompanied the attack, but was never severe. Occasional functional disorders of the nervous system were present, and subjective light and colour phenomena were seen. Sight was never completely lost, and was very rarely improved by treatment. The ophthalmoscope revealed the

appearances at an early period of a partial papillitis, while in those cases which were observed later there were pallor and incomplete atrophy of the disc. Some cases more recently reported were then briefly described, together with some unpublished cases, one of his own and six of Mr. Nettleship's, which the latter had allowed him to make use of. These added seventy-five individuals to the original number of Leber. Statistics gathered from them showed that the disease was roughly grouped about two periods of life—puberty and that of the decline of the sexual functions. The great majority occurred at the age of puberty, for of sixty-five in whom the age of onset was known, nearly fifty occurred between the ages of thirteen and twenty-three inclusive. In answer to the question, "What other diseases of the optic nervous system bear the stamp of heredity?" he compared the group of retinitis pigmentosa and allied affections, contrasting them with Leber's disease. He decided that consanguinity had very little to do with the disease under discussion. All hereditary diseases represented in the histories of the patients or their families were then mentioned, and the question of how far they were prone to produce amblyopia was entered into. Amongst the diseases discussed as to their connection with optic atrophy were hereditary syphilis, epilepsy, insanity, and spinal diseases, while a special reference to hereditary ataxy was made. Collecting the evidence, he concluded that the hereditary nature of the affection depended on the transmission of a neurotic diathesis (the neuropathic type in which Leber classed the individuals), which left the patients specially prone to any exciting influence which was liable to affect the optic nerve. Exciting causes were looked for which had a depressing influence upon the nervous system in general. The influence of the sexual system was first discussed, and the liability to nervous disorders at the two periods of life represented by the disease was regarded as extremely significant. These influences were more potent in young men than in women, but he had been unable to find any case in which a disorder of vision could be attributed to sexual influences alone, because in most of the cases other common exciting causes (for example, tobacco) were present. An illustrative case of Mr. Nettleship's was mentioned. The more important question of tobacco as an exciting cause was then discussed at some length. In nearly all the families added by him to the previous literature of the subject, one or two of the individuals were smokers. The cases, if isolated and treated as cases of tobacco amblyopia (which they strongly resembled), would be regarded as instances of a bad or stationary type. Very similar cases existed, though rare, among juvenile smokers. Mr. Hutchinson had expressed the opinion that tobacco caused blindness owing to an idiosyncrasy which might be

found in several members of a family. He would go further than this, for though when a depressing influence upon the nervous system was present tobacco might act as the exciting cause and induce the well-known form of amblyopia, still something more was needed to explain these non-retrogressive cases. He therefore considered that the evidence pointed to some peculiar inherited predisposition to pathological disturbances of the nervous system, the precise part of the nervous system (the optic nerve) being determined by the kind of exciting influence. (Lancet, Oct. 29, p. 862.)

PURULENT OPTHALMIA.—So long as the redness, heat, and swelling are on the increase, iced cloths should be applied to the lids, without interruption, day and night. Every fifteen minutes the lids should be gently separated and the secretion carefully washed out with bits of absorbent cotton dipped in a saturated solution of boric acid. I fully appreciate the value of an abundance of water in making all contagia more or less inactive. But the difficulty in the case of the eye has been to employ irrigation with effectiveness. I have devised for this purpose an eyelid retractor, the arms of which are hollow, with a number of perforations in the claw for the passage of the fluid, which is supplied by a fountain-syringe. The lids should be gently lifted from the eyeball by means of the retractor, and the spray of fluid allowed to play upon the upper *cul-de-sac* for a few minutes, the length of time to be regulated by the amount of the discharge. I employ a two-per-cent. solution of silver from the very beginning of the disease, for I am convinced that it is capable of doing the most good in the early stage of the disease. By *dropping* the solution into the eye, the movements of the lids distribute it better than would be the case when the solution was brushed over the conjunctiva. The frequency of the application should be regulated by the character of the conjunctiva; the more vascular and succulent the conjunctiva, the more frequently should the two-per-cent. solution of silver be employed. When the vascularity and succulence of the conjunctiva are very pronounced, a twelve-per-cent. solution may be brushed over the conjunctiva of the everted lids. If the conjunctiva of the globe is only slightly affected, this stronger solution had better be washed off before the lids are replaced; if, however, this part is much involved, the lids may be replaced and the eye washed out, after about one minute, with cold water, and the cold compress be applied at once. As soon as the swelling decreases, the cold applications may be limited to two hours morning, noon, and evening. This treatment is certainly very simple, but it implies great and incessant care, and two skilled and trusty nurses—one for the day, the other for the night—who shall be in constant attendance. I know how terrible the

results sometimes are in gonorrhœic ophthalmia in children and adults, but in my experience these frequent instillations of silver, together with the other vigorous and persistent important adjuncts just detailed, save the majority of cases. (Dr. Joseph Andrews, New York, N. Y. Med. Journal, Sept. 25, p. 352.)

STYE IN THE EYE.—*Treatment.*—Dr. Abadie prescribes the following solution in the treatment of sty. Boric acid, 10 grammes; distilled water, 300 grammes. This solution is applied with cotton-wool to the small abscess of the eyelid, then covered with sticking-plaster and dry cotton-wool, so as to form an antiseptic dressing, which remains damp. If the sty does not break of itself, an incision with a bistoury point is made, and the contents are pressed out. The eyelids are subsequently washed with the solution for several days. (Medical Record, May, p. 210.)

STENOCARPINE.—*A New Local Anæsthetic and Mydriatic.*—A discovery has been made in America of a new active principle possessed of powerful properties as a local anæsthetic and mydriatic, which promises to become applicable in practical medicine and surgery (New York Med. Record, July 30 and Aug. 13, 1887). Dr. J. Herbert Claiborne, jun., of New York, appears to have been the first to examine the physiological action of this new substance. Having convinced himself that it possessed local anæsthetic and mydriatic properties in animals, he applied it to man. On June 27 three drops of a 2 per cent. solution of the alkaloid were instilled into the left eye of a medical friend. He complained of stinging sensation, immediately followed by slight lacrimation. In five minutes anæsthesia of the cornea and conjunctiva was complete; reaction of pupil to light, normal; no dilatation; palpebral fissure increased slightly; a "stiff" sensation in the lids. In eight minutes the punctum proximum was five inches; the lids less stiff; the eyeball feeling fuller than before. In ten minutes anæsthesia still complete; palpebral fissure markedly increased; no appreciable difference between the pupils. In fifteen minutes anæsthesia was the same; left pupil slightly larger than the right; reaction to light, direct, accommodative, and consensual, normal; conjunctiva slightly paler. In twenty minutes anæsthesia of cornea and conjunctiva not complete; dilatation increased, reaction to light direct, accommodative, and consensual; no blurring of vision. In thirty minutes, anæsthesia abolished, left pupil dilated *ad maximum* and uniform; neither direct, consensual, nor accommodative reaction can be seen. Right pupil contracted to pin-head size, and somewhat irregular, but reacting to light, directly, in accommodation and consensually. No difference between the tension of the two eyes. No systemic effect. Pulse, eighty. On June 28, at 4 p.m., P. P. was found to be twelve inches; dila-

tation about medium; palpebral fissure normal; the three reactions of the pupil to the light, faint. On June 29, P. P., eight inches; pupils slightly dilated; reaction to light, marked. On the 30th, the pupil was normal, with P. P. at five inches. At no time was there any unpleasant symptom. The drug was next employed in a number of cases of disease of the eye and other parts. Foreign bodies were removed from the corneæ of patients, invariably without pain. Cases of conjunctivitis simplex were treated with it also; some constriction of the vessels occurred, but this by no means approached that caused by cocaine. Its effects on the nose, ear, and skin was also tested, with fairly satisfactory results. No experiments were made as to the physiological effect of the drug when introduced into the general system. From analogy it would be reasonable to expect that the anæsthetic effect would be increased by stronger solutions. In its effect upon the eye it seems to stand midway between atropine and cocaine. Its anæsthetic effect lasts about as long as that of cocaine; its mydriatic effect is greater than that of atropine; while its paralysing effect upon the muscle of accommodation is perhaps as great as that of atropine, reaching its maximum effect in about six or seven hours, and disappearing rapidly thereafter. It would seem to be indicated wherever cocaine is, so far as its anæsthetic properties are concerned; and where atropine is, so far as its mydriatic properties are concerned. In fact, for irides rendered sluggish by inflammation it seems to be superior to atropine, though the duration of its effects, as we have seen, is by no means as great. In seven instances Dr. Claiborne observed a diminution in tension when the pupil was dilated *ad maximum*, though he has not been able to detect it in all cases. Dr. Knapp, of New York, has already added to our knowledge of the drug, especially as regards its general (systemic) action. He finds that when applied externally to an unbroken cutis, it produces no anæsthesia. Small doses rapidly absorbed may produce transient general symptoms—pallor of the skin, cold perspiration, dizziness, stupor, fainting, nausea, and weakness. Larger doses cause the most *alarming general symptoms*—violent tetanoid convulsions, opisthotonus, dilatation of the pupils, excessive acceleration of pulse and respiration, and prostration—like those of strychnine. Introduced into the veins stenocarpine is the strongest poison, causing death almost instantly by arrest of respiration and pulsation. It is certainly dangerous to inject even small quantities into vascular tissues, such as the orbit, for instance; it appears even unsafe to inject it under the skin in quantities exceeding ten minims of a 2 per cent. solution, i.e., about .01 gramme ($\frac{1}{8}$ grain). We should also be on our guard if we apply it to an open wound during the progress of an operation. The tree that yields this remarkable

alkaloid grows abundantly in Louisiana, where it is known as the Tear Blanket Tree. The leaves resemble those of the *Acacia stenocarpa*, whence the name stenocarpine suggested for the active principle. Complete botanical details may be shortly expected. (Practitioner, Oct., p. 299.)

MIDWIFERY AND THE DISEASES OF WOMEN.

ANTISEPTIC SPONGE TENTS.—After many experiments, Porak found it the best plan to keep sponge-tents in an ethereal solution of iodoform. They may be kept in this solution for months without in any material way having their expanding power lessened, if the bottles be kept in the dark. The action of light is to decompose the iodoform and generate iodine, and if this proceed to any extent the dilating power of the compressed sponge is much impaired. The author observes, however, that prolonged contact of the medicated sponge with the uterine mucosa will, in endometritis, be an advantage rather than otherwise, and if necessary, sponge so prepared may be left several days in the uterine cavity. (Dr. Gardner's Report in Canada Med. and Surg. Journal, Aug., p. 17.)

CARCINOMA OF THE UTERUS.—*Total Extirpation for.*—[In the Medical Chronicle for September, 1887, Dr. W. J. Sinclair presents an abstract-review of a paper by Fritsch, on sixty cases of total extirpation of the cancerous uterus, of which we reproduce the following paragraph.] The chief facts of the cases are stated in tabular form. The first operation was performed on the 20th of June, 1883, and the 60th on the 25th of September, 1886. Seven operations were done in 1883, seventeen in 1884, twenty-five in 1885, and the rest in 1886. The statements as to the results are derived from information sought in a systematic manner in the autumn of 1886, at least in the case of all the patients whose condition was not known at that time. Seven of the sixty died; two from loss of blood, one from tying of the diseased ureter, one from sudden collapse after syringing when she was apparently out of danger, and two from peritonitis. This is a mortality of 10·1 per cent. "A result which about corresponds to the death-rate from castration and laparotomy in general." Fritsch does not consider the results specially favourable, but believes that in his early zeal he operated on several unsuitable cases, the like of which he would now let alone. He affirms his belief that, making every concession to the discredit of the operation, it is now completely justified and established. In twenty of his cases there had been no relapse for a time varying from three years and two months to ten months, two of the cases being over three years, and

seven of them two years and upwards since the operation. He quotes von Volkmann on cancer of the breast to prove that this is a much more favourable result than is obtained from the operations aiming at the extirpation of mammary cancer. "Such results must certainly call for further operations. We can already state the opinion and demonstrate the fact that after total extirpation of the cancerous uterus recurrence of the disease is rarer than after any other operation for cancer." The only way to improve the prognosis in cases of cancer of the uterus is to attend to them in the early stage, and hence the matter rests in the hands of the general practitioner. Fritsch laments that in innumerable cases the patients announce that they have been under treatment six or eight months, and by the time he sees them operation is out of the question. "It is to be hoped that the knowledge of the fact that cancer of the uterus is curable will soon spread among the people, that the patients themselves will apply for more timely aid, and that the practitioners, influenced by the results announced from every side, will either suggest operation earlier than heretofore, or operate themselves." (Medical Chronicle, Sept., p. 486.)

DILATATION OF THE CERVIX UTERI.—*Hegar's Dilators for the Cervix Uteri.*—Hegar's dilators are slightly curved ebonite cylinders, about three inches and a half long, the distal end forming a blunt cone and the proximal being fitted with a handle. There are twenty-six sizes usually supplied, the transverse diameter varying from one-twelfth of an inch to one inch (see Fig. 1, p. 268). The method of using them is as follows:—The patient is put in the lithotomy position, and the vagina thoroughly syringed with some efficient antiseptic, such as 1 in 2000 corrosive sublimate solution. Sims' speculum is introduced, and the anterior lip of the cervix seized with a pair of vulsellum forceps, preferably a pair having a catch at the handles like Spencer Wells's forceps. The direction of the uterine cavity is then ascertained with an ordinary sound. The dilators should have been previously placed in numerical order in a shallow porcelain tray and covered with a 1 in 20 carbolic lotion. One of the dilators corresponding to the supposed calibre of the cervical canal is then dipped in carbolised oil and passed through the cervix, which is held steady by the vulsellum forceps in the left hand. If the dilator used only passes with difficulty, it is held in position a minute or two before withdrawing it. It is important to have the next larger size ready to pass at once after withdrawing each dilator. In this way the dilators are passed one after the other till the cervix is sufficiently open to admit the finger. This degree of dilatation is usually obtained after No. 19 of the series has passed. If any morbid condition is discovered in the cavity of the body of the uterus, this is

treated by suitable means. Polypi, for instance, or pieces of placenta can be removed. If a growth of doubtful character is discovered, a small portion may be removed for microscopical examination. (Dr. A. H. N. Lewers, p. 367.)

Dilatation of the Cervix Uteri.—The “Artificial Amnion” for.—It consists of three parts—to wit, a hollow sound, a small force-pump, and a finger-stall of pure and fine rubber, these latter being of various sizes. The sound is specially constructed, being hollow. Its uterine extremity is somewhat bulbous, and it is perforated there and at the “shoulder” for the passage of air. That portion of the tube betwixt the bulbous extremity and the “shoulder” is of much smaller calibre than the rest of the instrument, and is made of silver. It is over this uterine portion that the finger-stall of pure rubber is drawn, and firmly tied by means of silk just below the shoulder. To use the instrument if the os and cervix are not sufficiently patent to admit freely an ordinary sound or bougie, then they should be brought into that condition by the means suggested in the earlier portion of this paper. If they will admit a sound or bougie, however, they are sufficiently patent to allow of the introduction at once of the “Amnion.” All the air should be compressed out of the rubber stall, and the tap at the outer end turned off, so as not to admit any more until it is *in situ*. The stall is then well lubricated with any lubricant which has been rendered antiseptic. Using the instrument, then, as an ordinary sound, it is passed well inside the neck of the womb. The pump is then attached to the outer extremity of the sound, the tap is *turned on*, and the stall is dilated, at first slowly, but gradually, until about twenty strokes of the piston have produced an adequate dilatation. Frequently less than this will do. The tap is then *turned off* again, the pump is removed, and the rest left *in situ*. What happens is this, viz., that after a variable time, according to circumstances, but as soon as ten or fifteen minutes in some cases, uterine action is set up, with the result that the cervix and os are gradually but surely dilated after the method intended by nature, namely, *ab intra*, and the instrument is expelled after a few hours, more or less, according to the nature of the case. The makers are Messrs. Mappin & Co., Birmingham. (Dr. Park, Edinburgh Med. Journal, Sept., p. 276.)

EMMET’S OPERATION.—At the Leeds and West Riding Medico-Chirurgical Society, on May 6th, 1887, Dr. Braithwaite described fourteen cases in which this operation had been performed. As operations, eleven were successful, two imperfect, and one a failure; but as relieving the symptoms complained of by the patients, six were successful, four unsuccessful, and two were complicated with other affections, which rendered the

result difficult to estimate. The lacerations generally occurred in multiparæ, and the symptoms varied according to the amount of cicatricial tissue in the angle of the wound. (Lancet, June 11, p. 1187.)

EXTREME FLATULENT DISTENSION AFTER DELIVERY.—*Puncture of the Abdomen for.*—[Dr. Priestley refers to the notes of a case sent to him by Surgeon-Major Franklin, in which extreme abdominal distension, coming on after delivery, was successfully treated by repeated puncture of the large intestine.] The presentation was natural, but after a long and tedious labour, resulting from inefficient pains, the case had to be terminated by forceps under an anæsthetic, and the perineum was ruptured. Sutures were put in the perineum, and all went well until two days later, when the patient became hysterical, and began to suffer from nausea and vomiting; at the same time the abdomen became much distended. Hypodermic injections of morphia, with the application of turpentine to the abdomen, checked the sickness, and allowed milk and lime-water to be taken for a time. Next day the abdominal distension had enormously increased, there was constant vomiting, some dyspnœa, occasional rigors, and signs of exhaustion. My correspondent says, the obstetric authorities, Playfair, Barnes, and Ramsbotham, gave him no help as to the way he was to relieve the extreme abdominal distension which was threatening the life of his patient. He had tried all the usual remedies without effect, and so was obliged to act for himself. After consultation with a colleague, Dr. Harris, he punctured the ascending colon with a small trocar. The gas escaped with considerable force, making a whistling noise as it passed through the small cannula. With the aid of pressure, the greater part of it was expelled and a binder adjusted. Immediate relief was afforded, vomiting ceased, and only slight nausea remained. She had a good night, and next morning the temperature was normal. This first puncture was made about seventy-two hours after the birth of the child. Forty-eight hours later it was necessary to puncture the colon again, and this was followed, as after the first operation, by immediate relief to all the distressing symptoms. The second operation was followed by the giving of calomel, in doses of one-twelfth of a grain, every half-hour, and continued for about sixty hours, until the bowels acted freely. The temperature rose to 102° after the second puncture, and for ten days the case continued to cause some anxiety, owing to nausea and want of sleep. After this the improvement was steady, and the patient eventually got quite well. There is no record of the temperature during the access of the illness, and nothing is said of pain or subsequent inconvenience from the abdominal puncture. (Dr. W. O. Priestley, Lancet, April 9, p. 718.)

FIBROID TUMOURS OF THE UTERUS.—*Treatment by Electricity.*—

[It is quite evident, from an important paper which was read by Dr. Apostoli, of Paris, before the Gynæcological Section of the British Medical Association at Dublin in August last, that we have in Electrolysis a remedy by which we may cause the arrest of growth, and vast diminution in size, of fibroid tumours of the uterus. The treatment is carried out thus:—The patient being placed in the lithotomy position, let the vagina, uterus, instruments to be introduced into the vagina, and the hands of the operator, be disinfected by perchloride solution. Place on the abdomen of the patient a piece of plastic clay, about 10 inches by 5, and three-quarters of an inch thick. In this embed a flat metallic plate (or slightly concave towards the abdominal wall) about 5 inches by 3 in size. This is connected by a wire with the battery to be used, and forms one reophore or pole. The other pole is intra-uterine, and consists of a platinum or steel sound, by the sharp point of which the tumour is very slightly punctured. The current is passed between the two poles, and gradually increased in strength, from 20 up to 150, or even up to 250, milliamperes. The peculiarity of this arrangement is that the action is *monopolar*, the pole on the abdominal wall, owing to its size, being inactive. No sensation of consequence, and certainly but little if any pain, is experienced by the patient. In the case operated upon by Dr. Apostoli in our presence at Dublin, no anæsthetic was required, and the patient showed no signs of pain. The effect of this powerful current upon the tumour is not to destroy it, but to alter its vitality and destroy its power of growth. After a few repetitions of the treatment, it will be found to diminish in size, and ultimately, although the tumour is still there, it becomes much less in size, moveable, loose in its capsule of cellular tissue, and harmless to the patient. We note from Dr. Apostoli's cases that the average number of applications to each fibroid has been fifteen. The current is allowed to run from five to seven minutes. This remedy will probably in many cases supersede oöphorectomy, as oöphorectomy superseded, in suitable cases, removal of the tumour itself by surgical means. The paper must be read in order fully to understand Dr. Apostoli's views, and especially the difference of effect between the positive and negative poles—either of which, as stated, can be at will made the active one. It is worth noticing (and we take this from Dr. Savage's paper on the same subject) that when the negative pole is used in the uterus, and the tumour is punctured, the sound or probe should be of steel, as platinum is too soft for the negative pole; but if the positive pole is used in the uterus, a blunt platinum sound is preferable. All necessary appliances can be obtained of M. Gaiffé, 40, Rue St. André-des-Arts, Paris, or of Messrs. Coxeter, London.—Ed.]

Fibroid Tumours treated by Electricity.—[See Dr. Apostoli's paper printed *in extenso* at page 393-400. Also the valuable papers of Dr. Savage, p. 400; and of Dr. Steavenson (with *illustrations* of apparatus and instruments) at page 403.]

FISSURED NIPPLES.—*A Domestic Nipple-Shield.*—Dr. Frank Holyoke states in the Boston Medical and Surgical Journal, that a patient who suffered from extremely sensitive fissured nipples invented for herself most perfect nipple-shields, by suspending from a ribbon about the neck two deep, wire tea-strainers. They were held in place by a properly-fitting waist, and the nipples, thus covered, were entirely free from any irritation. She had, moreover, such a copious supply of milk, that it was otherwise quite impossible to keep the nipples dry. This was remedied by the ready passage of the milk through the wire gauze to a layer of absorbent cotton covering the tea-strainer. Not until she began to employ this method of protecting the nipples did the process of healing go on satisfactorily. This young mother's clever device has been a source of great comfort in a number of similar cases which have since then come under Holyoke's care. (Medical News, March 12, p. 292.)

INTRA-UTERINE DEATH.—*Preventive Treatment.*—With regard to the subject of preventive treatment, Dr. Priestley stated that, so far as obviating some of the forms of intra-uterine death is concerned, we are absolutely in the dark, and the therapeutics of the subject are still a closed book. Still, a careful study of the several pathological conditions in the parents, combined with the local expression of the results of these conditions, allows in some cases of methods of treatment being formulated and of rules for guidance being laid down which in practice have been attended with happy results. Whenever, therefore, a woman has once or more frequently lost the product of conception at an early or later period, careful inquiry should be made into the health of both parents, and any previous history of illness should be accurately scrutinised. No pains must be spared to ascertain whether syphilis is at the root of the misadventures. When either parent has, in the near or distant past, contracted this disease, both should at once be put under anti-syphilitic treatment before a fresh conception is permitted, and this ought to be sufficiently prolonged to give it a fair chance of producing satisfactory results. Dr. Priestley said that he had repeatedly seen good effects from small doses of bichloride of mercury, with bark, given during the first three months of gestation, when there has been no opportunity of commencing the treatment before conception began. Similar favourable results have been observed to follow the administration of iodide of potassium. If inquiry shows that the health of

either parent is disordered or deranged from some other cause than syphilis, care must be taken to trace out the nature of the deviation from health, and so to define it that treatment fulfils its purpose. Not the mother only, but the father also, must be put under supervision. Any constitutional peculiarity or diathesis must be met by appropriate means—the strumous, by tonics and cod-liver oil, with such improved climatic conditions as may be feasible; the gouty rheumatic by limitations of diet, careful regimen, and alkaline medicines. Keeping the bowels of women who are liable to abortion unloaded by aperients is important. Such laxatives as are not likely to stimulate undue action of the bowels or straining must be chosen, else the medicines may stir up the very mischief they are given to prevent. Compounds of sulphur, the confection of senna, and saline aperients seem best to fulfil the needful indications. The advantages of general bloodletting are doubtful, and its employment may lead to harm instead of good; but local depletion by leeches is less objectionable. For anæmia, preparations of iron must be administered in some form least likely to disturb the digestive organs of the patient, and these should be given not only antecedent to the occurrence of conception, but continued with such modifications and in such combinations as may be suitable during the progress of pregnancy. Where local conditions have been ascertained or suspected to be the cause of repeated abortion or of later foetal death, the treatment must be directed in accordance with the special requirements of the case. Especial care should be taken to remove as far as possible all indications of endometritis prior to the commencement of pregnancy, an unhealthy condition of the lining membrane of the uterus being regarded by most authorities as a potent cause of disease in the foetal membranes and placenta. Rest in the recumbent position is important, especially at the times which correspond to the days of the catamenial period, and all forms of locomotion likely to jar the body must be sedulously avoided. Chlorate of potash, Dr. Priestley thinks, may act usefully as an alkaline salt in preventing the formation of coagula and fibrinous deposits in the placenta. In instances where the progress of zymotic disease or of inflammation in some organ of the patient's body is attended with high temperature, he suggested that an attempt should be made to lower the temperature of the uterus and of the foetus either by the application of ice-bags to the maternal abdomen, or of those tubular appliances for the application of cold which may be modified to fit any part of the body. Some of the baths and waters on the Continent have a high reputation for their tonic properties and their favourable influence on pregnancy. Aix-les-Bains is said to be useful in these cases. Courses at Schwalbach and Kissingen have been

followed by happy results. The former place is more appropriate for patients who are more or less anæmic, Kissingen for those in whom the digestion and portal system are at fault. (Abstract of Dr. W. O. Priestley's Lumleian Lectures, *Lancet*, April 30, 1887, p. 867.)

LABOUR COMPLICATED BY FLAT PELVIS.—*Treatment in.*—As a result of his experience, and after a study of the statistics of labour complicated by a flat pelvis, Winter arrives at the following conclusions: That, in primiparæ, as the abdominal muscles are tense, powerful, and capable of giving efficient aid to the contractions of the uterus, as the child is not so likely to be as large as in subsequent labours, and as the lower uterine segment is not so easily stretched to a dangerous degree of attenuation, the expectant treatment will be found, in the majority of cases, to give the best results; operative interference being resorted to, as a rule, only after the head has become engaged in the superior strait, when the labour may be terminated by the application of the forceps. In multiparæ, on the other hand, as the child is apt to be larger than in first labours, as the abdominal muscles are relaxed and cannot be depended upon to aid efficiently the expulsive efforts of the uterus, and as the lower uterine segment may soon become excessively stretched, the early performance of version will often avert the danger of a ruptured uterus, or the formation of fistulæ, the result of prolonged pressure upon the maternal soft parts. Winter thus occupies middle ground between the views of Schröder and Winckel, the former advocating early version in cases of flat pelvis when the engagement of the head in the superior strait is delayed, although there is nothing in the general condition of the mother or child that demands operative interference; the latter, on the contrary, advising an expectant treatment as long as the general condition of the mother and child remains good. (*Medical News*, Feb. 19, p. 213.)

Labour.—*How to avoid Undue Tear of the Perineum during Labour.*—All the attendant can do, apart from the familiar means of relaxing perineal spasm by chloroform and hot applications, is to prevent the sinciput being forced down in advance of, or faster than the occiput. He restrains the foetal head from passing too rapidly. He thus has always to get the occiput to lead, and to get it fully born first if possible. So far as I can judge, the best way of doing this is as follows: With the patient lying, of course, on her left side, the attendant places the thumb of his right hand, guarded by a napkin soaked in hot sublimate, in front of the anus, and presses it gently there. The pressure is not in the direction of a line joining his thumb and the pubic arch, but nearly in that of the axis of the pelvic outlet. By this, descent of the sinciput is hindered, and that of

the occiput favoured. When the latter is beginning to pass under the pubic arch, the fingers of the same hand are placed between it and the apex of the arch, so that when the occiput has cleared the arch, the fingers are passed towards the nape of the neck, and the head thus grasped in the hand, the thumb lying over the sagittal suture. This gives one complete command over the head which is now engaging in the diameters between the nape of the neck and forehead and face, and allows the whole passage with as little tear as possible. (Dr. Berry Hart, Edinburgh Med. Journal, April, p. 890.)

LACERATIONS OF THE CERVIX OCCURRING DURING PARTURITION.—*Treatment.*—The preventive treatment consists in the judicious use of opium, chloral, or chloroform, in the avoidance of all manipulative efforts to dilate the cervix with the fingers, or attempts to apply the forceps and effect delivery before complete dilatation has taken place. When a laceration occurs, it has been recommended by Pallen, of New York, to have recourse to immediate suture. Having failed to check by a tampon post-partum hemorrhage from a lacerated cervix, he passed Sims' speculum, sewed up the laceration with silver wire, and thus stopped the bleeding. For my own part, in a case of that kind, I should first try hot water injections, and if these failed then operate, using all precautions possible to avoid septic trouble. If, however, there be no hemorrhage, it seems to me better not to attempt immediate suturing, as many lacerations which appear deceptively large just after parturition become much smaller and of no consequence (or even completely unite) if the patient be kept strictly quiet for three or four weeks, and have a hot vaginal douche used night and morning. Here we see the importance of making a vaginal examination before ceasing our attendance, in order to satisfy ourselves that no laceration of any moment exists. (Dr. Wm. Duncan, Assist. Obst. Physn. Middlesex Hospital, Lancet, July 9, p. 64.)

MASTITIS.—*Treatment by Pressure.*—In cases of painful lactation and puerperal mastitis, where the breast is swollen and indurated—whether suppuration threaten or not—we have been accustomed to direct that the mammary gland should be raised and supported by a suspensory bandage or handkerchief. Strapping with ordinary adhesive—or sometimes lead or belladonna—plaster has been practised both before and after suppuration, to the great comfort of the patient; but I doubt whether we have hitherto realised the benefit derived from a firm and equable pressure by a carefully-adjusted bandage placed over the opposite shoulder and round the chest, so as not only to support, but to uniformly compress the mammary gland, or that we have sufficiently profited by the results of this practice systematically

carried out. The comfort to the patient is immense; and whether suppuration take place or not, the treatment may be continued up to the moment that the pus is evacuated, and from that time until the part is well. I have found this method of great use in other cases of painful breasts—(1) in which a lady tried to nurse her child, but failed to have milk enough; (2) where milk was present in the breasts, but the mother was unwilling to persevere with lactation; (3) in a case of persistent mammary pain after abortion at two months; (4) in a patient who had reasons for not nursing a first child, though the milk was plentiful and the breasts very full and tender. In these cases the napkin fastened with pins was sufficient, and the tighter it was drawn the greater was the comfort to the patient. In the latter case, plasters also were used; but in future I shall endeavour to dispense with them in cases of simple suppression of lactation. It seems as if the pressure upon the acini and lactiferous ducts prevents, or at all events limits, secretion and accumulation in the gland, and encourages the absorption of inflammatory products, limiting considerably the area of suppuration when this takes place, and favouring the healing process after evacuation. The relief experienced in all my cases was most marked. (Mr. Charles J. Wright, Leeds, *British Medical Journal*, July 23, p. 174.)

PEMPHIGUS IN LYING-IN WOMEN.—Pemphigus occurring during pregnancy is mentioned as a rare occurrence. Barnes refers to a case which lasted three months and ended in complete recovery after delivery. In another case it recurred during several successive pregnancies. In all, however, it seems to have disappeared with the termination of the pregnancy. The following case, therefore, is of some interest from the fact that the eruption on each occasion developed soon after delivery, lasted several weeks, and was entirely absent during pregnancy. It occurred in the outside Maternity Charity of the Leeds General Infirmary. Mrs. A., aged thirty-seven. Has had twelve children and one miscarriage. Her husband is healthy, and there is no history of syphilis in husband or wife. Beyond some debility resulting from her numerous confinements, she usually enjoys good health. On Nov. 12th, 1886, after a natural and easy labour lasting about six hours, she was delivered of a healthy living child. All went on well for a few days—so well, indeed, that she herself thought she would escape another attack. On the fourth day, however, she felt ill, and in the course of a few hours the eruption broke out. A few blebs appeared first on one arm, which were of various sizes, and contained clear fluid. They subsequently developed in other situations, such as the dorsum of the foot, the back of the neck, and the face. The mucous membranes were not affected. The constitutional dis-

turbance was slight; there were anorexia, restlessness, and general feeling of malaise, but no rise of temperature. General tonic treatment was prescribed, together with full doses of arsenic. The blebs were pricked and dressed with boracic acid and vaseline. Improvement soon took place, but blebs occasionally appeared, and the disease did not entirely disappear until five or six weeks after the confinement. Following the patient's last three previous confinements, she has had exactly similar attacks; they have usually commenced about the fourth day after delivery, and have lasted for several weeks. The first attack lasted ten weeks; the second also about ten weeks; the third lasted fifteen weeks, and was the most severe of all; the fourth and last was the mildest, and accompanied with less general disturbance than the others. (Mr. Octavius Croft, *Lancet*, Oct. 29, p. 858.)

SARCOMA OF THE FEMALE BREAST.—[Dr. Gross publishes in the July number of the *International Journal of Medical Sciences* a most important and exhaustive article dealing with the mammary sarcomata, of which we reproduce here only the chief headings. (See also page 135 of this volume.)] Of the varieties of sarcoma, the spindle-celled, which includes the fibrous, constitute 68 per cent., the round-celled 27 per cent., and the giant-celled 5 per cent. of all cases. Of the entire number only 4, or 2·70 per cent., occurred before the sixteenth year, or during the developmental state of the mamma; 67, or 45·27 per cent., appeared between the sixteenth and fortieth years, or at a period when the breast and genitalia are functionally most active; and 77, or 52·02 per cent., after the fortieth year, or during the period of their functional decline. Their etiology is most obscure, since their development is rarely traceable to injury or disease, and is not influenced by hereditary predisposition, while the social state and menstrual irregularities or arrest are surely unimportant agents in their production. The growth of sarcomata might naturally be expected to be connected with menstruation, pregnancy, or lactation, or with conditions which render the mammary gland more vascular; but the influence of an increased flow of blood to the organ, which has been assumed by certain authors, is not confirmed by an analysis of the cases that I have collected. Thus, in only three examples was an increase in bulk witnessed at the menstrual period, while in two the tumour became smaller. In one the rapid growth began during pregnancy, and in two at the menopause. During their further progress sarcomata continue, as a rule, mobile and free from superficial or deep attachments; the contiguous structures are not invaded by tumour elements; the skin remains natural in colour and texture; the subcutaneous veins are not enlarged; the nipple is normal; and the associated lymphatic glands are not contaminated. To these general statements some exceptions

must be noted. Sarcomata of the breast are to be regarded as locally infectious in 14·19 per cent. of all cases. Although the skin is stretched, attenuated, and ulcerated in 18·59 per cent. of all examples, it was discoloured in only 36, or in 23 per cent. The superficial veins are enlarged in 15·39 per cent., but only to a slight extent in 2. The nipple is retracted in 3·25 per cent. Of the 156 cases the lymphatic glands were enlarged, and now and then tender, in 19. The glandular enlargement was due to irritative hyperplasia in 16, in 10 of which ulceration of the tumour was present, while they were infected in only 3. This immunity of the glands from contamination is remarkable, and is a valuable sign in the differential diagnosis of malignant mammary growths. A discharge from the nipple is not met with in the solid tumours, but occurs in one case out of every nine and a half of cystic sarcomata, the proportion being smaller than is met with in cystic fibromata, and is of great value as a symptom of enlargement of the ducts, although it is of itself unimportant in the differential diagnosis. The growth of sarcomata is attended with pain in 35·71 per cent. of all cases. In 92 cases only 1 ran a natural course, it being an example of round-celled tumour of both breasts, that proved fatal, with presumed secondary deposits, in seven months from the first appearance of the disease. The remaining 91 were subjected to the knife. Of these, 32 were well for periods which varied between one month and ten years and nine months; 42 were marked by local recurrence; in 8, not only was there regional reproduction, but metastases were found post-mortem; 3 recurred, with unmistakable evidences of general dissemination; 4 were characterized by metastases, and 2 by presumed metastases, without recurrence. In other words, 64·83 per cent. of these cases were endowed with malignant features. Of the 53 cases in which the disease recurred locally, more than one-half, or 57·7 per cent., took place in 6 months, while after 12 months there were only 13, or 28·8 per cent., and of these there were only 4, or 8·8 per cent., after 2 years. These statements lead to the belief that the chances for the patient are relatively good after the lapse of 2 years, and that the prognosis is all the more favourable as the period of freedom from signs of local contamination prolongs itself. As the latest date of reproduction was four years, we may assume that the 12 cases which remained well after the lapse of that time were permanently cured. The average date of recurrence was $10\frac{1}{2}$ months, and the total life of these patients from the first observation of the disease to the final report after the last operation was 7 years and 9 months. The number of recurrences, or operations for recurrence, was 1 in 23 cases, 2 in 13 cases, 3 in 7 cases, 4 in 1 case, 5 in 4 cases, 6 in 2 cases, 7 in 1 case, 12 in 1 case, and 22 in 1 case. Sarcoma is less infectious locally,

but more infectious as regards the general system, than carcinoma. Its more relatively benign character is shown not only by the larger proportion of cures, but also by the fact that the average duration of life, from the first observation of the disease to the date of the last removal after operation, is forty-two months longer; and this contrast becomes the more striking when it is stated that the majority of the sarcomatous patients were still living, and the majority of the carcinomatous subjects were dead. Not only is this statement true for sarcomata in general, but it holds good for the three varieties, since the average life for round-celled sarcoma is fifty-four months, ninety months for the spindle-celled, and one hundred and eight months for the giant-celled. The treatment may be summed up in a few words. The entire breast, along with any skin that may be invaded, must be extirpated, especial care being paid to the complete removal of every particle of parammary fat and the fascia of the pectoral muscle, in which tissues experience shows that recurrence takes place. In the event of repullulation the growths should be freely excised as fast as they appear, as such a practice not only prolongs life, but may bring about a final cure. (Dr. S. W. Gross, Philadelphia, International Journal, July, p. 18.)

VESICO-VAGINAL FISTULA.—*A Modification of Simon's Operation for Closure of the Vagina.*—Dr. Madden reports a case in which on account of the extent of the fistula and the failure of a previous plastic operation it was found necessary to close the vaginal orifice, as recommended by Simon. With this view a superficial incision was cautiously made, extending elliptically through the vaginal mucous membrane from above the meatus anteriorly round the canal to its posterior commissure behind the nymphæ, and thence dissected off the subjacent structures and removed, so as to leave an extensive raw surface. A great deal of venous hemorrhage took place during this, which was arrested by hot water and turpentine, whilst a few small spouting arterial branches were twisted or ligatured. When all hemorrhage had been thus arrested the denuded surfaces were brought together by silver wire sutures, so as to completely close the passage from the vaginal orifice upwards. The vulva was sealed with aseptic dressing, leaving merely an opening for the retaining catheter, and secured by a pad and a bandage. On the next day she complained a good deal of pain and soreness, which was relieved by opiates, but beyond this her recovery was uninterrupted, the temperature never rising above 100°. The catheter, being a railroad one, was changed and cleaned daily, without disturbing the dressing, until the eighth day, when the sutures were removed and the parts found united. Her bowels were then cleared by an enema, the vulval dressing replaced, and the catheter continued for another week, at the

end of which it was finally withdrawn, and she was then found to have complete retentive power in the recumbent position, though when standing there was still a slight dribble from the dilated urethra, which gradually lessened, and after leaving the hospital she had no vestige of this trouble, from which she remained free until her death, from fever, eighteen months later. (Dr. More Madden, Dublin Journal of Med. Science, May, p. 424.)

WASHING-OUT THE PUERPERAL UTERUS.—*Method of.*—1. The patient ought to be so placed that her shoulders are raised while her pelvis is depressed. This is just the converse of what is required in gynæcological douching—the object being to prevent any quantity of the lotion remaining *in utero* by giving it free e-cape. Two methods of accomplishing this can be adopted—either by placing the patient on her back in the bed with a douche pan placed underneath her buttocks, or else that she be placed transversely across the bed with her hips depending across its edge. The latter seems to me the more convenient and satisfactory. 2. Care should be taken that the os uteri is patent, so as to allow a free escape of fluid. Frequently, however, it is closed, and when such is the case recourse must be had to the grooved glass tubes, or to the double channelled catheter. The glass tubes are the more generally applicable, for one amongst other reasons, as the sublimate solution corrodes a metal instrument, and the eye of the catheter readily gets blocked. 3. The continuous douche is preferable to the ordinary syringe; but inasmuch as the douche can is not always at hand, the syringe will be the most usually available. 4. The tube should be carried right up to the fundus uteri, and if the syringe be employed, it ought to be used slowly, steadily, and without jerking. 5. The fluid ought to be injected at a temperature of about 115° F., and continued until it return quite clear and sweet, or at most mixed with a little pure blood. Special attention ought to be paid to having the temperature high, so as to induce uterine contraction, and that for two reasons—(1) Because the uterus in these cases is usually atonic; and specially in those cases where corrosive sublimate is employed, so as to insure that none of the salt remains in the uterus to act as a poison. 6. A point of essential importance is that the fundus uteri should be grasped by the hand of an assistant in such a manner that the thumb and middle finger compress each Fallopian tube, so that at one and the same time the fluid may be squeezed out of the uterus, brought intimately in contact with the whole uterine surface, and prevented passing above the Fallopian tube. It must be borne in mind that the puerperal uterus is frequently rotated on its transverse axis, and therefore must be grasped obliquely. 7. I would strongly urge that the patient should be placed under chloroform for at least the first

washing out. I am confident that many cases suffer from the want of this precaution ; because, owing to the tenderness of the parts, it is impossible to manipulate the uterus and instrument properly, the tube being not carried beyond the os internum, if so far. And, besides, it gives the operator the opportunity of exploring the cavum uteri, if need be ; and I may add, it is usually best to do so. (Dr. J. Halliday Croom, p. 380.)

THE THERMOPILE AND SECONDARY BATTERIES.—*A Convenient Means of Producing Electricity for Medical and Surgical Purposes.*—Electricity has never played so important a part in the routine of daily practice and consulting-room work as its undoubted usefulness would seem to indicate that it should. The explanation is to be found in the extreme inconvenience attendant upon the methods of generating electricity at present employed. Not to mention the initial cost of procuring a good combined battery, capable of furnishing both continuous and induced currents, and without dwelling on the fact that when procured it is unsuitable for the electric cautery, everyone who employs it must be painfully impressed with the constant trouble and time expended in keeping it in order. The zinc plates have to be amalgamated, the acids to be prepared and introduced beforehand, and the corroded connections gone minutely over and rectified before the battery is used. During its employment difficulties may arise from polarisation and other causes, although in the bichromate batteries the polarisation difficulty has been pretty well overcome. After the battery has been used, the emptying and cleaning of the cells have to be gone through, and perhaps a couple of hours spent in this before it is laid aside. Even then the remains of acid and the resulting galvanic action corrode the brasswork and connections, and it is uncertain whether it may not require before next it is used a prolonged visit to the electrical mechanic's workshop. It is, I think, a fair estimate to say that each employment of the battery involves three or four hours of work. Nor do the objections named exhaust the inconveniences that are urged against the batteries. Bottles of acids are difficult to keep, stoppers become fixed, and the bottles are broken in their hurried removal, the waste acids are inconvenient to be got rid of, and, above all, no acid battery in ordinary use is in the least suited for the requirements of transport. The Leclanché batteries are too bulky, and, being weak, too many cells are required, so that, like most others, they are quite unsuited for transport. The Gaiffé batteries are not easily recharged, and in practice have been found unsuitable. The only really convenient appliance for transport—the magneto-electric induction machine—is useful only as an exciter of faradaic muscular contractions. (See Professor Ogston's description of this apparatus at page 420.)

PRACTICAL MEDICINE.

DISEASES AFFECTING THE SYSTEM GENERALLY.

ART. 1.—ON THE GENERAL TREATMENT OF FEVERS.

By JAMES NIVEN, M.B., M.A. Camb., Medical Officer of Health for Oldham, Editor of the *Medical Chronicle*.

[Dr. Niven concludes a long and interesting paper, dealing mainly with the self-protective powers of infectious fevers, with the following remarks upon the general treatment of fevers:]

The treatment of fever must be directed mainly to maintain the strength and to procure rest.—I shall say very little on this subject, except to throw out some hints. Cases of fever requiring careful treatment are toxic cases, cases where death is liable from exhaustion, and cases where it is liable from complications. In toxic cases our power is least, but still, in those toxic cases attended with delirium and high fever at the start, such as we see in scarlet fever, we may tide the patient over by cold sponging and the avoidance of all irritations.

In cases where death is liable from exhaustion, the principal things are quiet and good feeding.—To consider this class, and also those in which complications are liable to cause death, and also to illustrate my proposition as to treatment, let us take a severe case of typhoid fever. One of the great things we have to dread is perforation of the abdominal ulcers. Now this occurrence will depend partly on the constitution of the patient and partly on treatment. I need not say that no food should be given which could in any way irritate the ulcer. But that is not all. The ulcer is a tropho-neurosis, secondary to local changes no doubt, but still a tropho-neurosis, and its occurrence and course can be greatly affected in two ways—first, by judicious diet: second, by avoiding irritation of the nervous system. Judicious diet means a nutritious diet, easy to assimilate, and which is taken up readily by the stomach and bowels. This may consist of milk, beef tea made from raw meat or chicken, and properly flavoured, gruels made from fine meals, arranged and varied, fruit juices sugared, and raw egg beat up in palatable materials.

Too much attention cannot be paid to humouring the caprices of the stomach, and varying the food to suit its demands. It is also of great consequence to subdue persistent sickness in typhoid fever. If sickness persists, one must dodge about till one has subdued it, and got the stomach to submit to taking up some food. This may

be effected by various means, among which may be mentioned cold sponging, alkaline drinks, with a little champagne in them—sometimes champagne alone will do it; a sinapism over the pit of the stomach will often be of service. The whole armamentarium of drugs is at our service, and if the obvious and, perhaps, more useful measures I have mentioned did not succeed, I should then try drugs. In a case where the digestion is evidently feeble, food ought to be peptonised. We may thus save energy out of all proportion to the direct energy of digestion saved. The food should be freely pancreatised, and some odoriferous liquid added to cover any taste. Pancreatised milk does not form large curds, a great gain. Finally, though all other irritations are to be avoided, easily assimilated food must be got into the patient; if rendered necessary by sickness, in the form of enemata. This is vital, for the reasons I have stated. We thus guard as far as possible not only against perforating ulcers, but also against other trophoneuroses, such as bedsores, and against the complications of fever generally.

We have seen how little will irritate our patient into elevation of temperature. His nurse ought, therefore, to be unirritating, possessing quick perceptions and free from fuss. In all respects she should behave as though the illness were nowise dangerous. The patient will generally like the light subdued and the windows open. In fact, every source of irritation must be promptly removed, if possible.

In the same way the nervous system must be assisted to recover from the jangle produced by internal causes as well as by external. It is in this respect that antipyretics are of value. I have made numerous trials of antipyrin and antifebrin in typhoid, typhus, and scarlet fever. Their usual effect is to subdue restlessness, remove delirium, and produce sleep. In fact, their chief value is as nerve sedatives. I have not given more than 7 grains of antifebrin and 30 of antipyrin. In two cases the reduction of temperature after antifebrin did not follow. Both died. I think antipyretics are of real service in assisting a prognosis. Where no effect is produced, the case is certainly a very serious one. This is true, also, of quinine. I have not given larger doses, because both drugs in large doses have caused collapse. I prefer antifebrin to antipyrin, as it has seemed to me that it interferes less with the stomach, and it is equally harmless in small doses.

These drugs, then, are valuable as calmatives, as is, also, the cold bath. Both, I believe, help to restore the impaired nutritive processes. The cold bath seems, however, to have a more lasting effect. Still, I have seen the effects of five grains of antifebrin last more than twenty-four hours. On the whole, I think the same good effects may be got out of antifebrin as out of the cold bath, if its use is carefully regulated. I should not, however, omit

cold sponging, which often effects much good, without the risks attending the bath.

A word about alcohol. In my opinion alcohol is of the utmost value in the treatment of fever, not indiscriminately employed, but given especially in cases characterised by great prostration, and in the later stages of severe cases. Champagne is in the last instance the appropriate remedy. I have seen at least one case unquestionably saved by champagne, and I do not know that we can say as much for any medicine. Alcohol is often useful to procure sleep. It is the best drug in small-pox, given as hot toddy, but usually everything is unavailing in delirious small-pox. In scarlet fever its effects on delirium are sometimes surprising. The delirium ceases, and the patient passes into a sound sleep. Nevertheless, on the whole, I prefer antipyretics for this purpose, and should restrict alcohol, as a rule, to the cases which I have mentioned.—*Medical Chronicle*, June 1887, p. 208.

2.—ON SCARLET FEVER AND ITS TREATMENT.

By CLEMENT DUKES, M.D., Physician to Rugby School.

Drs. Jamieson and Edington have proved that the specific cause of scarlet fever is a bacillus, which they have cultivated, and with which they have inoculated animals and produced scarlet fever. They have also shown that this bacillus occurs in the blood during the first three days of the fever; that, later on, it is absent from the blood; and that it is found most extensively in the desquamating skin after the third week. They have, further, indicated a method by which this bacillus can be destroyed in the skin, and thus the spread of the infection of scarlet fever can be minimised, and the unprotected, even while residing in the same house, be safe from falling into its trammels.

But a still more important matter is the treatment and arrest of scarlet fever in each individual; for the first cry of a parent whose child has scarlet fever is, "What can you do to save my child; and how can you spare him from becoming maimed for life by its sequelæ?" his second question being, "How can you prevent its spreading to my other children?" This second question Drs. Jamieson and Edington have answered. It is with the hope that I may induce them to investigate the first question that I am writing this paper; for it has already been brought within a measurable distance of being answered by Dr. Illingworth, of Accrington, who states that the biniodide of mercury (Hg I_2) is a specific for scarlet fever. Recognising the importance of his letter in the use of mercury as a germicide, I resolved to administer the drug at the earliest opportunity. I have now given the Hg I_2 in several cases of scarlet fever—with this result, that it not only arrests the fever, but it prevents the desquamation of the skin, or

arrests it to such an extent that only a slight scurfiness of the skin of the hands and feet arises. If such be found to be invariably the case, will the bacilli of scarlet fever be found in the skin at all; and, if not, will not the infectious period of scarlet fever be thereby reduced to a few days only, and will not the sequelæ of scarlet fever be absolutely prevented?

The Hg I_2 can be administered in the form of a pill or as a mixture of the liq. hyd. perchloridi c. pot. iodid. The only drawback to its use which I have at present found is that if it be given before the diagnosis is absolutely certain, the physician will be apt to think, when he finds no desquamation taking place at the usual time, that the case was not one of scarlet fever. The drug prevents the desquamation of the epithelium of the tongue, as well as of the skin, and the throat rapidly heals under its use.

I was busy collecting facts when Drs. Jamieson and Edington's valuable paper appeared, and I should have waited till I had collected a sufficient number of instances before writing this paper had it not been for the desire that others, especially the above-named authors, would assist in establishing, or refuting, this treatment, for the experience of one individual is limited.

The benefit to be obtained from the use of Hg I_2 is far-reaching if it be reliable in all cases, for it not only prevents the desquamation of the skin, and thereby probably prevents the major part of the infectious nature of scarlet fever, but it will probably also be found that it obviates the necessity of keeping patients in bed for three weeks, which is the only safe rule hitherto, and isolated for five or six weeks, and will prevent the occurrence of the much-dreaded sequelæ.

The gist of the whole matter seems to be this: 1, that if the bacilli of scarlet fever are only discovered in the blood for about three days; 2, that if the bacilli, after this date, chiefly occupy the desquamating cuticle; 3, that if this desquamation can be prevented altogether by a medicine which destroys bacilli; 4, then, in all probability, the infection of scarlet fever will only last a few days, and we are within a measurable distance of limiting the spread of scarlet fever, and of removing its fangs by preventing the sequelæ.
—*British Medical Journal*, July 9, 1887, p. 67.

3.—COMPARATIVE NOTES ON RÖTHELN, MEASLES, AND SCARLET FEVER.

By C. HAIG BROWN, M.D., Medical Officer, Charterhouse School.

The somewhat rare opportunity of witnessing a considerable epidemic of rötheln at the commencement of last year, and one of measles in the middle of the year, among the members of the same community, has suggested that a recapitulation of the most prominent symptoms in each outbreak, as gathered from notes taken at

the time of observation, may be useful; and a few words upon an outbreak of scarlatina at the same time may add to their utility.

One case of *Rötheln* occurred at Charterhouse in January, nine days after the reopening of the school, the boy having contracted the malady at a children's party at Cheltenham, on January 13th, where three of his sisters were also infected. From this case (in spite of most active precautions as to isolation and disinfection) 202 others occurred, in batches, 179 of those affected being boys in the school, and 23 children or servants of the masters. From the notes of 159 cases I give the following particulars:

The period of incubation, noted accurately in 75 cases, the remainder being omitted in consequence of doubt as to the exact time of infection:

6 days in	7 cases.	12 days in	10 cases.
7 " "	3 "	13 " "	6 "
8 " "	1 case.	14 " "	11 "
9 " "	10 cases.	15 " "	5 "
10 " "	11 "	16 " "	2 "
11 " "	18 "	17 " "	2 "

The highest temperature, noted in 63 cases; in each case it happened that the temperature was at its highest point with the full development of the rash:

105° in	2 cases.	101° in	5 cases.
104° "	1 case.	100° "	9 "
103° "	2 cases.	99° "	11 "
102° "	1 case.	98° "	32 "

Injection of conjunctivæ, present in 112, absent in 47.

Catarrh of fauces and pharynx, present in 103, absent in 56. In 58 there was complaint of sore throat; in 26 the throat was admitted to be sore when the question was put; in 19 it was visibly injected, but swallowing did not cause pain.

Bronchial catarrh, present in 5, absent in 154.

Diarrhœa, absent in all.

Enlargement of posterior cervical glands, present in 75, absent in 84.

Malaise, severe in 2, marked in 7, slight in 75, absent in 73.

Delirium, present in 5, absent in 154.

Rash, very much resembling that of measles, but differing in being less dusky, in each spot "having an areola of its own before coalescence," and in appearing upon the chest before the face:

Appeared on the first day in 119 cases.

" " " second " " 39 "

" " " third " " 1 case.

Desquamation, fine and branny, usually limited to the face, in a few cases affecting the chest, in no case involving the palms or soles, present in 55, absent in 104.

Measley odour, noticeable in 5 cases, not detected in 154.

Complications and sequelæ, occurred in 46, did not occur in 113. "Weakness" of the eyes in 8; blepharitis in 4; styas in 1; follicular tonsillitis in 7; persistent cervical adenitis in 5 (in one case terminating in suppuration, with no detectable local cause); Eustachian catarrh in 3; herpes labialis in 4; persistent coryza in 3; laryngeal catarrh in 2; bronchial catarrh in 5; alveolar catarrh (pulmonary) in 2; albuminuria (febrile) in 2; nephritis in 1; boils in 1; purpura in 1. (All these occurred within three weeks of the onset.)

Previous Disease;

5 had previously had rōtheln (?), 154 had not.

144 " " " measles, 15 " "

42 " " " scarlatina, 117 " "

Of the 5 supposed to have had rōtheln, none had had measles; of the 15 who had not had measles, 14 contracted measles in the summer, that is a few months after their attack of rōtheln.

147 of these cases returned to their friends (after due "disinfection") fifteen days after the commencement of illness, with official permission; 11 returned earlier (none, however, before the tenth day), without official leave, but on the responsibility of their parents. None conveyed the disease to their families.

One case of *Measles* occurred at Charterhouse in June, 21 days after the school reopened, the boy having contracted it on May 23rd, while on an afternoon visit to a house in Guildford. Seventy-six cases occurred from this boy, in regular fortnightly batches. I quote from the notes of 60 cases.

The period of incubation was 14 days in all.

The highest temperature, which in each case happened to coincide with the full development of the rash,

105° in 1 case. 102° in 8 cases.

104° " 16 cases. 101° " 6 "

103° " 25 " 99° " 1 case (second attack).

The day of disease on which the highest temperature occurred:

The fourth day in 47 cases.

" fifth " " 12 "

" sixth " " 1 case.

The temperature fell by crisis in 46, by lysis in 12.

The earliest day on which the temperature was normal:

The fifth day in 19 cases. The seventh day in 16 cases.

" sixth " " 20 " " eighth " " 5 "

Injection of conjunctivæ, present in 59, absent in 1 (second attack).

Coryza, present in 51, absent in 9.

Faucial catarrh, present in all. (No complaint made in 16.)

Bronchial catarrh (detectable with stethoscope), present in 28, absent in 32.

Diarrhœa, present in 3, absent in 57.

Enlargement of posterior cervical glands, present in 4, absent in 56.

Malaise, severe in 44, marked in 12, slight in 3, absent in 1 (second attack).

Delirium, present in 9, absent in 51.

Rash appeared at end of third or beginning of fourth day in all.

Desquamation (affecting face and chest only), present in 59, absent in one (second attack).

Measley odour, noticeable in 42, not detected in 18.

Complications and sequelæ, occurred in 48, did not occur in 12.

"Weakness" of the eyes in 1; laryngeal catarrh in 2; bronchitis, slight in 24, bad in 4; ulcerativa stomatitis in 1; follicular tonsillitis in 1; persistent vomiting in 1; diarrhoea in 3; endocarditis in 1; pericarditis with effusion (separate from the last mentioned) in 1; hemorrhages (subcutaneous and nasal) in 2; albuminuria (febrile) in 5; persistent anæmia in 2.

Previous Disease.

1 had previously had measles, 59 had not.

19 " " " rötheln, 41 " "

20 " " " scarlatina, 40 " "

Of the 19 who had had rötheln, 14 had it in the spring of the same year. 51 returned to their friends with official leave on the twenty-ninth day; 7 returned earlier on their parents' responsibility, none before the end of three weeks. In no case was the disease communicated to the family.

In January, 1886, 5 well-marked cases of *Scarlatina* occurred in the school, almost simultaneously, seven days after the holidays ended, all of which were traceable to one local cause. Their only point of interest in connection with the epidemic of rötheln is that there was not the slightest resemblance between the scarlatina rash and the rötheln rash. But it occurred in March, 1884, that there were 13 cases of infectious disease at Charterhouse which resembled the rötheln epidemic of 1886 in every point except the rash. This was exactly like the eruption of scarlatina. The temperature in no case rose above 99.6°, there was no vomiting, the throat was only slightly red, the consecutive peeling did not affect the palms or soles, and there was no subsequent nephritis; but the posterior cervical glands were enlarged, there were slight coryza and conjunctivitis, and more important than all symptoms were the facts (1) that of the 13, 5 had previously had scarlatina, and (2) that not one of them contracted rötheln in 1886, though 9 were still in the school, and exposed, like other boys, to infection.

It seems clear, therefore, either that Rötheln presents two varieties of rash, one scarlatinal, the other measley in appearance; or that under the name rötheln we are confounding two separate disorders, alike in general symptoms, but dissimilar in form of eruption, while both are distinct from the fevers whose rashes they simulate.—*British Medical Journal*, April 16, 1887, p. 826.

4.--ON THE USE OF ANTIPYRETICS IN TYPHOID FEVER.

By Professor NOTHNAGEL (from a lecture delivered in the Medical Klinik of the University of Vienna).

Thallin, Antipyrin, Antifebrin are all capable of reducing temperature in a remarkable manner. When the crisis arrives in an acute febrile affection, it runs its course in a great number of cases without any injurious complications, the temperature falls, the pulse becomes less frequent, and the patient feels well as the disease comes to an end. But there are conditions under which the crisis takes place with injurious and dangerous accompaniments, symptoms of collapse come on, the temperature and pulse rate fall below the normal, the pulse becomes arhythmic, cerebral symptoms make their appearance under certain conditions, dependent on anæmia of the brain, which we designate as the delirium of inanition, or the coma of inanition. If you now see how these three drugs, and also the other remedies act, you will note the following:—The more energetically and rapidly a chemically acting antipyretic reduces the temperature, the more marked are those phenomena which we have recognised as concomitant symptoms, and, under certain conditions, as dangerous concomitants of the natural reduction in temperature of the crisis. You see this the most markedly in those remedies that reduce the temperature the most energetically, in resorcin and kairin, for example. The temperature falls rapidly with these, the patients sweat profusely and get a sort of pulse and cardiac action that remind one of collapse, or there is actually a pronounced collapse. The temperature afterwards mounts upward again with a rigour or chill. You may observe the same appearances with thallin, antipyrin, or antifebrin, but not to such a marked degree. In a number of cases the temperature falls with more or less pronounced indications of collapse when these remedies are employed, but only exceptionally, however, not always, and not as a rule. In fact, we make use of these three remedies because with them symptoms of collapse only make their appearance exceptionally, and to a slight degree. But they may come on. This depends in part on the size of the dose, and in part on the individual susceptibility, on the individual reaction with regard to the drug. It is an incorrect and unphysiological notion when a new antipyretic is introduced to the public with the statement added that it produces no disagreeable bye effects, that no sweating and no symptoms of collapse supervene, and that the temperature does not rise with a rigor, &c. One can only say that in the case of these remedies this only rarely takes place, so rarely that for this reason they deserve the preference over the others, but it certainly does take place. Clinical observation has shown that in fact these accompaniments may present themselves with all these chemical agents.

The three mentioned only rarely give rise to them, and therefore we give them. If you ask me to which of these three remedies I should give the preference, from my own conviction, and from my experience with them at the bedside, to be honest, I must say that it seems to me that they are of equal value. I must, if you will, have a certain paternal predilection for thallin, for this emanated from my own Klinik, but I must say that antipyrin, and—so far as we have seen at present, but we have not used it for so long a time—antifebrin, act in the same way. I have said that a special importance was attributed to thallin in typhoid on the part of Ehrlich, as a specific, these three drugs appear to be equal as antipyretics, I cannot concede any real difference between them. The dosage is as follows:—Of antipyrin we give 1·0—2·0—3·0 grm., 1 grm. hourly. Of thallin we give much smaller doses, 0·1—0·2, thus one-tenth to one-fifth of a dose of antipyrin. We give the same dose of antifebrin as of thallin, 0·1—0·2, a few doses one after another till the temperature has fallen; 0·25 to 0·30 may be given, 0·1 to 0·2 usually suffices. If you wish to effect a continuous antipyresis with thallin, you give still smaller doses, you begin with 0·03, or 0·04, or 0·05 grm., you try this and go on with it. Quinine and salicylate of soda stand *vis-a-vis* to these newer antipyretics. The antipyretic effect is pretty much the same in these two remedies. When salicylate of soda was introduced into therapeutics, there was a period when it was placed above quinine in the treatment of typhoid fever; that is not so now, however. From my personal experience in typhoid, I give the preference to quinine over salicylate of soda, as the latter produces copious perspiration, which is a disagreeable accompaniment. That it acts less powerfully upon the heart, cannot be affirmed. Quinine is the old and tried antipyretic in typhoid; it should be given in the case of adults in doses of 1·0—1·5—2·0 grms., in one or two doses at intervals of at most an hour; it is best to give hydrochlorate, or sulphate of quinine in pills or capsules; in solution the sulphate is given. The time at which the drug is given is not without importance. We do best to give it in the evening, half a gramme somewhere about six o'clock, and about half-past six another half-gramme. We give the salicylate of soda most effectively in the evening, in about double the doses of quinine. We give 2·0 to 3·0 grammes in a couple of doses following one another. We see that with quinine and salicylate of soda the temperature falls much more slowly than with thallin, antipyrin, and antifebrin.

You may see in this what I have told you already, that the more rapidly a remedy reduces the temperature, the more readily do the symptoms of the crisis come on; that with salicylate of soda, perspiration and the symptoms of collapse are more readily induced than with quinine. I cannot recall to mind ever having seen these symptoms with quinine. The fall of temperature with quinine

approaches more nearly to lysis, if I should make such a comparison, whilst thallin, antipyrin, and antifebrin approach more nearly to crisis, and accompanied by phenomena of crisis, whilst salicylate of soda occupies a position between the two. The same relation holds with regard to the after effects. With quinine and salicylate of soda the temperature mounts again slowly, the effect is more lasting, the most lasting with quinine; then comes the salicylate of soda, then the remaining antipyretics, with which the temperature mounts up more quickly. I must content myself with these short schematic outlines of these antipyretics, the details of which you will carry out by means of the lectures on the physiological actions of these substances.

In contrast to the chemical antipyretics stands the abstraction of heat by means of baths.

If now we would abstract heat in a case of typhoid, various methods are at our command—baths, packs, &c.; heat may also be abstracted by the application of ice-bags, lying on ice-beds, &c. The most varied appliances have been thought out, therefore, but we have returned from all these things, and now stand still at baths, packs, and sponging. Packs are employed mostly in the case of children, for the reason that this method of heat abstraction suffices with them, and when baths cannot be given. The baths themselves, which are the principal method, are sometimes warm and sometimes cold; the cold baths are given at a temperature of about 22.5° C. (73° F.). Patients are left in such a bath three to seven minutes, they do not bear longer. Anyone who, when feverish, has once sat in such a bath, will know how extremely unpleasant the sensation is. When the patients are weaker, one should generally be present in person at the first and second bath; the pulse must be watched. You must not forget that on the surface of the body a contraction of the peripheral vessels takes place, that the resistance for the heart is enormously increased, and that weakness of the organ may supervene. It is known that if a person springs into a cold bath—into a river, for instance—he may get an arrhythmic pulse, apparently caused by the action on the vaso-motor centre, the heightened cardiac resistance. In the case of weak persons, therefore, you must be present once or twice, or a little wine must be given them before, and, after the bath, when they are put back to bed, hot water bottles must be put to their feet, &c. When a patient begins to shiver in a bath, he must be at once taken out. When the patient cannot bear such a low temperature, he is first to be put into a bath at 22° C. (71° F.), and the temperature should gradually be reduced by running in fresh cold water. Warm baths are taken at a temperature of 24° to 26° R. (86° to 90° F.). The patients are allowed to stay in longer—five to ten minutes. If you see no effect, they must be left in longer—from a quarter to half-an-hour, and longer still—to one and two

hours even. In what cases, then, are cold baths to be used, and in which lukewarm? From what I have seen, I might formulate my experiences in the following:—I employ cold baths when the case is one of typhoid, in the first two weeks, or even in the commencement of the third, in the case of a strong patient who is not too far reduced, who has no cardiac feebleness and, generally speaking, no complications. I employ lukewarm baths when the case is protracted into the second half of the third week, and later still when the patient is weak—in the case of a patient previously weak, even in the first two weeks. When there is cardiac feebleness along with the fever, and especially when profuse diarrhoea is present, in these cases you should not give cold baths. This, grouped together in a few sentences, is what I have thought best to give you for your guidance. That this will not be always suitable, but that there are deviations from it, the case of the soldier will teach, that I have related—a young powerful man, in whose case, in the first fourteen days of the disease without complication, cold baths were of no assistance. There appear to be individual conditions, which do not permit of being brought into definite formulæ, which we do not know, and in which we must proceed tentatively. That is, indeed, the task of the physician, to find out the right thing in such cases and do it. I have already told you that when we employ antipyresis in typhoid, in hyperpyrexia we make use of the chemical antipyretics, but that, in the ordinary fever temperatures, we see great advantages in reducing the temperature by warm baths. This question was discussed by various clinicists at the last Medical Congress at Wiesbaden, and the majority of them expressed the opinion that, according to their experience, baths influenced the course of the disease more favourably than the chemical antipyretics, for the reason that baths not only act on the symptom of heightened temperature, but at the same time in some way stimulate the nervous system by their action on the cutaneous nerves, whether by direct reflex excitation of the sensory cutaneous nerves, or by their influence on those of the vaso-motor system; whatever it may be, they act at the same time on the nervous system, and we see that when baths are employed the sensorium becomes more easily and quickly free than when the chemical antipyretics are given. These in short outlines, are some of the principles for the employment of antipyresis in typhoid fever.—*Medical Press and Cir.*, March 30, 1887, p. 291.

5.—NATURE AND TREATMENT OF CHOLERA INFANTUM.

By VICTOR C. VAUGHAN, M.D., Professor of Physiological Chemistry in the University of Michigan.

[In this important and interesting paper, Dr. Vaughan calls attention to the development in milk of a ptomaine, which produces

nausea, vomiting, and diarrhœa. This ptomaine, which has been named tyrotoxicon, was discovered three years ago by Dr. Vaughan in poisonous cheese, and has since been found in ice-cream, which gave rise to serious gastro-intestinal disturbance when eaten. As the title of the paper indicates, the object is to show the causal relation of this substance to the summer diarrhœa of children (cholera infantum), and the clinical and experimental evidence adduced would seem sufficient to establish a very strong case in favour of the author's views. We reproduce here only the more important parts of Dr. Vaughan's paper, dealing with the case of milk and the prevention and cure of infantile diarrhœa. After describing the results of some experiments upon animals, the author says:]

Here we have the evidence for believing that this poison is an important factor in the causation of cholera infantum and similar diarrhœas of children, the violence of the attack varying with the amount of the poison present. When we remember that these diseases are most prevalent among the poor classes of our large cities, where fresh milk is almost unknown, we can readily understand their frequency. By such people milk is often not obtained until it has begun to sour; then it is kept at a high temperature, and often in a most foul atmosphere, and we all know something of the readiness with which milk takes up bad odours. This milk is then eaten by the little ones, who are weakened by poverty and everything that poverty means; insufficient food generally, and that of the poorest quality; insufficient clothing, insufficient and vitiated air. With these facts before us, it is not surprising that in all our large cities thousands of children die annually from the summer diarrhœas. Moreover, in our country places, how little attention is given to the food of children, we all know from actual observation. Cows stand and are milked in filthy barns and yards. The udders are generally, so far as my observation goes, not washed before the milking; the vessels for the milk are frequently found not as clean as they should be. Then there are the thousands of children that must draw their sustenance from bottles, the cleansing of which is in many cases not properly attended to. Crusts of decomposing milk form around the neck of the bottle, in the tube and nipple, and lead to the rapid decomposition of the entire contents of the bottle. I think that one of the most important advantages to be secured to breast-fed children arises from the lessened danger of infection of the milk with germs which may produce poisonous ptomaines.

I would not claim that decomposed milk is the sole cause of the summer diarrhœas of children; nor would I claim that tyrotoxicon is the only poison that may be developed in milk. It is *only one of a large class of bodies which are produced* by putrefaction, and many of these are cathartic in action.

But will this knowledge concerning the development of poisons

in milk and other foods aid us in the prevention and treatment of these diseases?

Preventive measures will consist for the most part in attention to diet, and especially to milk. I have drawn up the following rules concerning the care of milk:—

1. The cows should be healthy, and the milk of any animal which seems indisposed should not be mixed with that from the perfectly healthy animals.

2. Cows must not be fed upon swill, or the refuse of breweries, or glucose factories, or any other fermented food.

3. Cows must not be allowed to drink stagnant water; but must have free access to pure, fresh water.

4. Cows must not be heated or worried before being milked.

5. The pasture must be free from noxious weeds, and the barn and yard must be kept clean.

6. The udders should be washed, if at all dirty, before milking.

7. The milk must be at once thoroughly cooled. This is best done by placing the milk can in a tank of cold spring water or ice-water, the water being of the same depth as the milk in the can. It would be well if the water in the tank could be kept flowing; indeed, this will be necessary, unless ice-water is used. The tank should be thoroughly cleaned every day, to prevent bad odours. The can should remain uncovered during the cooling, and the milk should be gently stirred. The temperature should be reduced to 60° F. within an hour. The can should remain in the cold water until ready for delivery.

8. In summer, when ready for delivery, the top should be placed on the can, and a cloth wet in cold water should be spread over the can, or refrigerator cans may be used. At no season should the milk be frozen, but no buyer should receive milk which has a temperature higher than 65° F.

9. After the milk has been received by the consumer, it should be kept in a perfectly clean place free from dust, at a temperature not exceeding 60° F. Milk should not be allowed to stand uncovered, even for a short time, in sleeping or living rooms. In many of the better houses in the country and villages, and occasionally in the cities, the drain from the refrigerator leads into a cesspool or kitchen-drain. This is highly dangerous; there should be no connection between the refrigerator and any receptacle of filth.

10. The only vessels in which milk should be kept are tin, glass, or porcelain. After using the vessel it should be scalded, and then, if possible, exposed to the air.

With the attention demanded by these rules given to milk, it will become more valuable as a food, and the development of poisons in it before its introduction into the body will certainly be prevented.

But in the prevention of summer diarrhoeas, attention to the food

must not stop with its introduction into the body. The ferment which produces tyrotoxicon is widely distributed, and it only awaits conditions suitable for its development. We do not know exactly what germ it is that produces this poison; but it is either the butyric acid ferment, or some ferment which is frequently developed along with the bacillus butyricus; because I have found that if some butyric acid ferment be prepared according to the method usually followed in making butyric acid, and milk be inoculated with this and allowed to stand at the temperature of the body for a few hours, or at the ordinary temperature of the room for several days, the poison will appear. Moreover, as is well known, the bacillus butyricus grows best in the absence of air—we have already seen that the exclusion of air favours the development of tyrotoxicon. We are aware of the fact that the butyric acid ferment frequently does develop in the stomach. Therefore, I think that the prevention of these diseases necessitates some attention to digestion. If food lies in the stomach or intestine undigested, putrefactive changes will occur there.

During the hot months, children which are allowed to take food at will, often drink large quantities of milk, simply for the purpose of quenching thirst. Especially is this true when the parent forgets that a child would sometimes relish a drink of good water. I feel that this overloading of the stomach with milk, caused by thirst, often is of no little detriment. It is hardly necessary to specify in regard to other ways in which attention should be given to the digestive organs of children. Those that partake of other foods with their milk should be allowed only the most wholesome articles, and these should be in perfect condition. Moreover, the depressing effects of extreme heat upon the nervous system, and its consequent injury to digestion, should always be borne in mind.

Now we come to the discussion of the curative treatment of these diseases. The first thing to do is to stop the administration of milk in any form. The ferment is present in the alimentary canal, and giving the best of milk would simply be supplying the germ with material for the manufacturing of the poison. This no-milk treatment is not by any means a new idea. It has been taught for some years by a few of the best authorities; but it has not been sufficiently insisted upon. Moreover, the reason for it has not been hitherto understood. It was believed, in somewhat of a vague way, that the digestive organs lose their capability of digesting milk, and experience showed that the exclusion of milk led to improved results. But now that we know that a powerful poison is formed from the putrefaction of milk, the necessity of its exclusion must become apparent to all.

The food used may consist of chicken and mutton broths, beef juice, and rice or barley water. With this list, no difficulty will be experienced in giving the child sufficient nourishment. In the

medicinal treatment, the first thing to do is to cleanse the alimentary tract as thoroughly as possible. In the first stages of the diseases there is no better agent for this purpose than castor oil. But if there have already been several serous discharges, copious enemata of water will be more suitable. These injections may contain either an astringent or a disinfectant, or both. For the latter, Holt recommends benzoate or salicylate of sodium, and for the former, nitrate of silver or tannic acid.

The next thing to be done is to arrest the growth of the germ. This germ has been found so far to develop only in acid media. Therefore, I think it wise to administer some antacid. Probably there is nothing better in this line than the old chalk mixture. In the preparation of the chalk mixture, the druggist should be requested to use glycerine, as many druggists still use syrup in this preparation. The presence of the sugar leads to rapid decomposition during hot weather. It has been said that the use of the antacid is irrational, because the discharges are often alkaline. Of course, the serous discharges are often alkaline, because they consist of blood serum and will be alkaline unless they have remained in the intestine long enough to ferment; but the reaction of such discharges does not prove that the contents of the stomach and small intestine are alkaline.

As to the use of germicides, much is yet doubtlessly to be learned. No doubt the chief effect of subnitrate of bismuth in this disease may be due to its effect upon the germ. Holt makes an excellent showing for the salicylate of sodium, but since he has been using this drug he has followed the no-milk diet, and doubtlessly his lessened mortality has been due to the exclusion of milk quite as much as to the salicylate. He uses this drug in doses of from one to three grains every two hours.—*Medical News*, June 18, 1887, p. 674.

6.—ON THE GIANT-CELLED SARCOMA OF THE BREAST.

By S. W. GROSS, M.D., LL.D., Professor of Surgery in the Jefferson Medical College, Philadelphia.

[The following excerpt is taken from Dr. Gross's paper on Sarcoma of the Female Breast, a *résumé* of which appears in this volume. (See *Synopsis*.)]

As no attempt has hitherto been made to describe the life history of the giant-celled variety, and some of the modified forms of mammary sarcoma, the following facts will be found to be not devoid of interest.

In 8 cases of giant-celled tumours that I have collated, the average date of their first observation was $47\frac{1}{4}$ years, or at the ages, respectively, of 42, 45, 45, 46, 46, 49, 50, and 55. Of the 6 cases in which the social condition is noted, 3 were married, of

which 2 were parous, and 3 were single. The tumours were solid in 6, of which one was alveolar, and cystic in 2. The skin was violaceous in tint and adherent in one case of cystic tumour, and red and stretched in one of solid tumour. In one of the cystic tumours there was firm attachment to the great pectoral muscle. Ulceration was met with in 3, of which 2 were solid and 1 was cystic. The axillary glands were enlarged but not infected in 3 cases, 2 of which were cystic and 1 was solid, and enlarged lymphatic glands were detected in 3 cases of recurrence of solid tumours, in 1 of which, an alveolar growth, they were invaded by tumour elements.

All of the cases were subjected to the knife. In 1 the history ceases with the operation. In 3 there was no recurrence, and the patients were alive subsequently for ten years and five months three months, and ten years. In 4 the tumour recurred. In Billroth's case, a reproduction, with infected glands, was removed in two months, and another similar operation was performed in a few months. The patient died of erysipelas, but metastases were not found post-mortem. In the case of Riedel, six recurrent growths were removed in twenty years, and on death it was found that the patient was free from metastases. In the case of Estlander, a recurrent growth, along with the glands of the axilla, was removed in two years and five months, and the patient was well five years and nine months subsequently; while in the case of Stanley, the patient died with a recurrent tumour in two years after the extirpation of the breast. The average total duration of life of these patients from the first observation of the disease to the final report was nine years.

It will thus be seen that giant-celled, or myeloid, sarcoma sets up irritative enlargement of the lymphatic glands in 37·5 per cent. of all cases; that the skin is discoloured, the tumour ulcerated, and the surrounding tissues are infected in 25 per cent.; that the subcutaneous veins and nipple are normal; and that, while it recurs in 57·14 per cent., it never gives rise to metastatic growths.—*International Journal of Med. Sciences*, July 1887, p. 35.

7.—ON COLLINSONIA CANADENSIS.

By JOHN V. SHOEMAKER, A.M., M.D., Philadelphia.

Collinsonia Canadensis, commonly known as "stone root," or "knob root," is one of the most valuable of indigenous American medicinal plants. It is widely distributed, being found in richly-wooded soils from April to October in all sections of the United States. It possesses a rank aromatic odour, and is hot and somewhat pungent to the taste. Its principal medicinal constituent appears to be a volatile oil, which is driven off by boiling or drying.

All parts of the plant may be used in medicine; but the root is

the most powerful, and the portion usually employed. As it yields its virtues to water and alcohol, it may be administered in the form of a powder, or as the tincture, the fluid extract, or the infusion. The dose of the powdered root varies from 10 to 60 grains, that of the tincture from 20 drops to 2 drachms; the fluid extract from 15 minims to a drachm; the infusion from 1 to 4 ounces.

The physiological action of collinsonia has not been accurately studied. Small doses do not appear to produce any effect upon healthy persons, except a sensation of warmth in the stomach and bowels; large doses produce diaphoresis and nausea, followed in some cases by repeated but painless vomiting.

Collinsonia is highly esteemed in many sections of the country as a domestic remedy for gravel and other urinary affections. Clinical observation indicates that its power is not limited by any means to this class of disorders. It appears to be especially valuable as a sedative and anti-spasmodic. It is also possessed of considerable astringent and tonic properties. The popular belief in its efficacy in promoting the expulsion of urinary calculi is well founded. It relaxes the spasm of the ureters or of the urethra, and, by increasing the flow of urine and by lessening the sensitiveness of the genito-urinary membrane, facilitates the expulsion of small concretions. When they are of large size, collinsonia is powerless to either dissolve or expel them; but it will alleviate the sufferings of the patient by diminishing the irritability of the bladder and urinary canal until complete relief is afforded by surgical methods.

Acute cystitis can be more quickly relieved by collinsonia combined with aconite and morphia than by the administration of any other remedial agents. In two cases of this painful affection treated by me during the last four months in this manner, the patients were free from pain and fever on the fourth day, and discharged cured, one on the eighth and the other on the eleventh day. Cases previously treated without collinsonia invariably lingered from two to three weeks, and suffered for six or eight days from pain or vesical tenesmus.

I have not had an opportunity to try this remedy in chronic cystitis; but, reasoning from analogy, it should be similarly efficacious in that tedious and troublesome affection. Incontinence of urine in children, due to spasmodic contraction of the bladder, can be permanently relieved by the administration of one drachm of the tincture of collinsonia after supper and at bedtime for several nights in succession.

Nervous individuals, who may or may not have suffered from gonorrhœa, not infrequently complain that, one or two minutes after having urinated and readjusted their clothing, several drops of urine will involuntarily ooze out, staining their clothing and producing an unpleasant odour, which they imagine everyone around them can perceive. This trivial but annoying affection is due to

hyperæsthesia of the prostatic urethra or of the neck of the bladder, and can be effectually removed by the persistent use of the fluid extract of collinsonia in 20 drop doses four times a day. In chronic gonorrhœa, when copaiba cubebs and oil of sandalwood have failed to arrest the discharge, or have been rejected by the patient's stomach, drachm doses of the fluid extract of collinsonia given every four hours will not infrequently effect a cure. Leucorrhœa and prostatorrhœa may be relieved or cured in the same manner.

Constipation, hemorrhoids, rectal neuralgia, and vague pelvic or abdominal symptoms are due more frequently than is generally supposed to spasm of the sphincter ani. Dr. J. M. Matthews, of Louisville, Kentucky, has shown that prompt relief can be obtained in such cases from division or forcible dilation of the refractory muscle. My experience, though limited to three cases, leads me to believe that the persevering employment every night of suppositories containing from forty to ninety grains of the powdered collinsonia root will, in many cases, render any operative procedure unnecessary.

It is more than probable that vaginismus or spasms of the sphincter vaginæ can be readily and safely relieved without resorting to the ludicrous or painful methods narrated in the textbooks, by the continued employment of vaginal suppositories of collinsonia; opium, belladonna, chloral, conium, hyoscyamus, or stramonium may be added if advisable.

The anti-spasmodic properties of collinsonia render it of value in flatulent colic, infantile colic, and biliary colic. It is especially serviceable in the latter affection, if given in the form of warm infusions so as to thoroughly relax the biliary passages and facilitate the onward movement of the irritative calculi.

The most available preparation in colic is the tincture, the dose of which ranges from ten drops to half a drachm for children, and from one to two drachms frequently repeated for adults. Collinsonia alone will be found quickly curative in many cases of colic when unaccompanied by rise of temperature. It will not relieve lead colic, or the pain of peritonitis or entero-colitis.

Collinsonia has proved curative in my hands in two cases of gastralgia, in which morphine, cannabis indica, belladonna, and various other remedies only gave temporary relief. I also obtained markedly beneficial results from its use in five cases of dysmenorrhœa. Each patient was directed to take half a drachm of the fluid extract three times a day for a week before the appearance of the menses, and two drachms of the tincture every four hours during their continuance. In the first and fifth cases the pain though previously severe was not noticeable, in the remaining cases it was so much lessened that the patients pursued their daily avocations as usual, one as a seamstress, one as a saleswoman, and

the other as a telegraph operator, instead of being compelled to stay in bed for two or more days.

Ordinary colds and mild attacks of lumbago can be quickly broken up by taking a cupful of hot infusion of collinsonia at bed-time. Spasmodic croup can be immediately relieved by the same means.

Collinsonia is an effective remedy in relaxation of the uvula, chronic pharyngitis and hoarseness dependent upon a lack of tonicity of the vocal chords. The fluid extract may be given in these affections in half drachm doses four times daily, and employed also as a gargle when diluted with four times its volume of water. It is also of value in gastro-intestinal catarrh and catarrhal gastritis of beer and alcohol drinkers. It lessens the desire for liquor, restrains the secretion of mucus, and restores the normal tone of the alimentary canal, and reinvigorates the depressed nervous system.

Collinsonia is equal, if not superior, to cinucifuga in the treatment of chorea, and may be substituted for arsenic with advantage in many cases of that disease occurring in infancy and early childhood. In three cases recently treated with collinsonia, all traces of the disease disappeared in from two to four weeks. It is but fair to state that the same remedy failed to make any impression on two previous cases.

Collinsonia will be found palliative, if not curative, in whooping-cough, and may safely be given in that affection without the dread of disordering the stomach, or producing any other unpleasant symptoms. It may also be given with confidence in nervous cough, and the irritative cough of pharyngeal catarrh.

Collinsonia is also of value in moderate doses as a mild but certain general tonic, increasing the appetite, promoting digestion, and gently stimulating all the organs of excretion. It may be given with decided benefit in anæmia, chlorosis, incipient phthisis, and convalescence from the various eruptive fevers.

Externally, it constitutes an excellent application to contused and incised wounds. Indolent ulcers may be stimulated to healthy action by an ointment consisting of one drachm of powdered collinsonia and one ounce of fresh lard. Ascarides may be effectually destroyed by rectal injection composed of the fluid extract diluted with four parts of water.—*Brit. Med. Journal*, Oct. 1, 1887, p. 712.

DISEASES OF THE NERVOUS SYSTEM.

8.—ON TWO CASES OF THOMSEN'S DISEASE.

By THOMAS BUZZARD, M.D., F.R.C.P., Physician to the National Hospital for the Paralysed and Epileptic, London.

So far as I am aware, no case of the remarkable condition to which the name of "Thomsen's disease" has been applied has yet been described as having been observed in this country. Examples

have been reported from Germany, France, Russia, Italy, Sweden, and the United States, whilst the description given by Dr. Thomsen, of Kappeln, Schleswig, himself a sufferer and a member of a family largely affected with the disease, is well known as the source of the name which has been bestowed on the affection. I would refer those interested in the literature of the subject to a digest of it published by Dr. Paul Chapman in *Brain* (April, 1883), which has been continued up to date by Dr. Hale White in the same journal (April, 1886). These two articles contain an admirable summary of existing knowledge upon the subject.

The patient, E. C. F., aged 20, engaged in a commercial pursuit, was sent to me by Dr. Izod, of Esher, on account of a peculiar difficulty in the movements of his limbs. As long as he could remember he had always suffered more or less from this trouble; but it had been noticed especially of late, when he began to enter upon the duties of his business. In his own words, "before doing anything he feels that he must get his muscles ready." If he has been at rest for a short time and goes to make a movement, the muscles not only contract but remain contracted, so that a very strong effort on his part is required to make a fresh movement. He cannot run upstairs; after taking one step he is not ready to follow it up with another. On seating himself he is often unable to flex the knees, so that his legs remain for a time rigidly extended. And so, again, on wishing to rise, the muscles appear to be "set," and it is only by strong exertion that he can effect the necessary movement. He has often fallen down upon a railway platform on alighting from a carriage, because he has been unready to take the second step necessary to preserve his equilibrium.

It is characteristic of his condition that the difficulty described is only temporary. After a few flexion and extension movements of the knee, the tendency to stiffness ceases, and does not return until after he has rested for a few seconds. Thanks to this peculiarity, he can ride a tricycle very well after overcoming the stiffness which results from the first attempts to move the treadles; but if an impediment on the road should compel him to cease "paddling," he encounters the old difficulty in recommencing. So, likewise, he can play lawn tennis very fairly when he has overcome the stiffness which obstructs his movements at the beginning. In skating recently, he observed that if he were stopped suddenly, as in a collision, he could not go on again for a few seconds; and if he fell, he lay "like a log," unable at first to move a limb. He feels difficulty in beginning to run, but after a little while goes on very well. He can stop easily enough, but his limbs then grow stiff, and he cannot start again for a few seconds. The difficulty in beginning to move after rest, or in changing one movement for another, is intensified by anything producing "nervousness." If,

for instance, he is called sharply, he finds his muscles more than ever unfit to obey the orders of his will.

The patient is a sturdy-looking young man of middle height, whose general health has always been excellent. When stripped, the thighs are found to be extraordinarily developed, so that one is reminded, as he stands, of the sculpture of Michael Angelo, the muscles being sharply mapped out, and standing forth when in action in bold relief. When contracted, they feel firm and hard, but in a quiescent state are perhaps inclined to be somewhat flabby. The actual muscular force, as tested by the power of resisting passive movements, is distinctly less than might be expected from the bulk of muscle displayed; and the patient himself says that he is not very strong, and somewhat easily tired. When seated and asked to extend the leg upon the thigh, it is only after an interval of several seconds that he can do so. And in like manner, the leg being extended, he is unable until after a similar pause to place his foot upon the floor. The extensor cruris muscular mass is felt contracted, and relaxes only by slow degrees. During the relaxation the patient feels pain of cramp-like character in the muscle. Except for this, there is not the slightest sensory disturbance—no cutaneous anæsthesia, numbness, or loss of muscular sense; and the muscles are not tender when handled. If he lies upon the floor, the difficulty experienced in rising to his feet reminds one to a certain extent of that shown by a patient suffering from Duchenne's myosclerosis (pseudo-hypertrophic muscular paralysis), and the hypertrophy of his muscles lends aid to this general resemblance; but, as will presently appear, the electrical reactions are completely opposed to those which characterise that disease. The act of rising is laborious, and the help of the arms is much called upon. The knee phenomenon is entirely absent in each limb, even when the Jendrassik method is employed for testing it. The cremaster reflex is present, but weak; the plantar so imperfectly elicited as to leave some doubt as to its presence. Although the tendency to a tetanoid condition upon voluntary movement is by far the most strongly expressed in the muscles of the lower extremities, it is not absolutely confined to these. The patient describes some unreadiness and stiffness in the use of his arms. His articulation is peculiar, recalling to a slight extent that of a patient with trismus; and the lower half of the face is a little suggestive of the sardonic expression to be noticed in a case of tetanus. Occasionally his eyelids will become partly fixed in a half-open position, so that for an instant he can neither open them further nor shut them.

Examination elicits no signs of increased excitability to mechanical stimulation in the anterior crural nerve. A galvanic current of one milliampère applied to this nerve produced no muscular contraction; with two milliampères there was evident con-

traction in the vastus internus and externus and $KSZ < ASZ$; but on a second trial with the same strength of current, the condition was reversed— $KSZ > ASZ$. The inference was that the excitability of the *nerve* to galvanism is not heightened.

As regards the *muscle*, a push with a finger-point upon the vastus internus causes a lumpy wave of contraction to rise, which lasts for many seconds after the finger has been removed. If this be repeated, however, several times in rapid succession, a normal condition is brought about, so that the contractions following percussion subside with ordinary quickness. If, after this the muscle be left quiet for fifteen or twenty seconds, and the finger then again thrust into it, the phenomenon described is reproduced. It is evident that, unlike that of the *nerve*, the mechanical excitability of the *muscle* is greatly heightened. The muscles respond to a normal strength of faradaic current, and there is contraction of the vastus internus to a galvanic current of two milliamperes, and $KSZ = ASZ$. In the extensor communis digitorum of the left forearm, the interruption of a galvanic current from four milliamperes is necessary to cause contraction, and $KSZ > ASZ$. The excitability to galvanism of the thigh muscle is therefore apparently considerably greater than that of the muscle of the forearm. The peculiar condition of the muscular system gives rise to a remarkable phenomenon. The contraction of the vastus internus muscle following electric stimulation can be seen to persist long after the rheophore has been removed, and on several occasions of examination an interval of twenty-five seconds was required for the gradual return of the muscle to a state of relaxation.

The effect of mechanical and electrical stimulation upon the muscle is the same as that which accompanies volition, and it is to the persistence of induced contraction that the patient's embarrassment of movement is due. In strict correspondence, again, with what takes place as a result of repeated voluntary action, the exaggerated tonicity of the muscles passes off after a few repetitions of the application of electric currents, and then the contractions are observed to relax in normal fashion and in the usual time. After a rest of ten seconds only the phenomenon can be reproduced. The patient has no complaint to make as regards the action of the sphincters or of the muscles of respiration, except that he rather easily gets out of breath, but this he attributes to being out of practice in exercise. The heart sounds are quite normal.

[We omit, for want of space, the second of Dr. Buzzard's cases, which occurred in the person of the brother of Case 1, and was in all essentials quite similar to it.]

The symptoms presented by the two brothers are very characteristic of the disease, which has acquired its best-known designation from the physician whose description of it in his own person and family first drew any particular attention to it. The term

applied to it by Strümpell, "congenital myotonia," conveniently suggests the exalted muscular tonicity which is apparently the immediate cause of the symptoms; whilst "myotonic contractions," which has also been suggested, has the advantage of avoiding prejudice of the question whether the condition is always congenital, about which some doubt has been expressed. Allan M'Lane Hamilton, of New York, in an interesting article (referred to by Dr. Hale White in his critical digest), is disposed to doubt whether the so-called Thomsen's disease is a distinct malady, and suggests that the muscle stiffness on contraction is a frequent symptom in a variety of maladies. But the microscopical examinations made by Erb and G. Fischer would appear to show distinct anatomical changes in the muscular fibres—hardness and want of suppleness in the muscular bundles, with marked thickening of the fibres and changes in their transverse striation, together with increase in the number of nuclei of the sarcolemma.

I have never seen in any case of disease of the spinal cord or peripheral nerves the peculiar condition observable in these patients, who, it must be remembered, are, with the exception of the exalted muscular tonicity, in perfect health. There are no doubt remarkable tendencies to rigidity in certain organic and functional diseases of the nervous system, but they differ, according to my experience, from the state observed in Thomsen's disease, which is quite *sui generis*. In view of the fact that rapid repetitions of voluntary or mechanically induced muscle contractions will cause the abnormal tonicity of the muscle to disappear, at least for the time, it seems to me difficult to refer the peculiarity to the anatomical changes as a cause. One would perhaps feel more disposed to conjecture that these might be a result of a functional abnormality. But much extended observation will be required ere we can usefully discuss this point. I would refer incidentally to a circumstance of peculiar interest. In the view of some authorities the knee phenomenon depends upon locally induced contraction of a muscle, the tonicity of which it is essential should be well preserved. It would appear that the chief characteristic of the disease under discussion is an exaggerated tonicity of muscular fibres, and *cæteris paribus*, if the "tonus" theory of the knee phenomenon were correct, one would expect to find the response to a blow on the ligamentum patellæ more than usually well marked in such cases as I am describing. But instead of this, the knee phenomenon is entirely absent in the elder of the two brothers. At the same time the cremasteric reflex is very weak, and the plantar only doubtfully present. In the younger patient, as I have remarked, the knee phenomenon is present. According to the summary derived by Dr. White from a consideration of the various recorded cases, it is the rule that the reflexes are normal. It does not seem that they are ever exaggerated.

It is scarcely necessary to remark that in the absence of any definite information as to the pathology of this affection, nothing satisfactory can be said in reference to its treatment. As it is seen that exercise of the muscles, either by voluntary use or electric stimulation, conquers for a time the tendency to persistent contraction, trial is being made of the galvanic current, and regular exercise is recommended to the patients.—*Lancet*, May 14, p. 972.

9.—ON THE TREATMENT OF SPASTIC PARALYSIS.

By S. WEIR MITCHELL, M.D., Physician to the Infirmary for Nervous Diseases, Philadelphia.

[The following description of a new method of treatment for spastic paralysis is taken from a clinical lecture delivered in the Philadelphia Infirmary. Several interesting cases are narrated, and the clinical observations upon which the method is based are set forth.]

The plan I shall here describe is very simple, and may have been described before, and methodically used. Let me add that it helps but does not cure.

Every muscle concerned is to be put twice a day, and over and over in a condition of extreme extension by a series of manipulations easily taught to a strong nurse. An example will save a too elaborate description. The girl I now show you is accustomed to the process, and I shall use her as an illustration both of the means and its resultant value. Her clothes are somewhat in the way. The patient should be so far undressed as not to interfere with extremity of movement.

Placing her on her back, the nurse takes the foot in her lap and moves each toe in flexion and in extension, steadily and to the limit of endurance, and then slowly lets it go back to rest. Next the ankle is flexed to the limit with the knee in extension, then the knee is flexed and the foot carried firmly into prolonged extension; lateral motions follow. The leg is then flexed strongly but with deliberate slowness, the patient being on her face, and the thigh in extension, and while still in the same posture the nurse puts a hand on the buttocks and pulls the thigh back, or sets a knee on the buttock and gently pulls the leg up from the bed, so as to stretch the quadriceps. The anterior thigh muscles may also be stretched by putting the patient on her back half off of the bed with a pillow under the pelvis, and by pushing the leg downward. The lateral motions to stretch the adductors are managed best by two nurses, but it is easy to effect them by sitting on the bed or lounge between the limbs, and so with both hands forcing the leg into abduction, while the other leg is stayed by the body of the nurse. The stretching of the posterior muscles of the thigh is also easily done by lifting the whole limb while the leg is in extension on the thigh.

All motions should be firm and slow, so as not to arouse resistance, and as time goes on, should be repeated more often, as the distress lessens. At first the pain is annoying, but as I never propose so to stretch as to elongate the nerves extremely, it need not be such as to forbid progress. Nearly all old cases have a certain brawn-like hardness of muscle, and no doubt one does in all cases stretch and disturb somewhat the small nerves imbedded in these firm and unrelaxing tissues; but this is very different from the violent and painful nerve stretching above alluded to.

Whatever it is that we do by this process, if it be regular, steadily used, and done with thought-guided skill, it is assuredly helpful, and while it does not cure it brings in the end remarkable changes.

The hardness of the muscles lessens, the tissues get softer and sweat better, are less dry, the gait improves, the limbs get warmer, and, what surprises one, the general condition is often ameliorated. When you have reached a limit, and after some weeks, the favourable changes cease, it is time to see what more can be done by tendon sections which, at this stage, I am willing to use freely. After the wounds heal, indeed, pretty early, I return for a few weeks to the extensions, and train the patient to imitate them, which, with the least ingenuity, is easy enough.

In many of the spastic palsies of childhood which follow a series of convulsions, or are due to some intra-cranial trouble of uterine life, you will find that some muscles are spastic, some less so, some contracted and inert. According to their condition and electrical and other reactions, are they to be dealt with. Some need extension, some want to be electrically stimulated, and need also massage. Each muscle and group must be considered, and the wants provided for. It is troublesome. It needs patience. It exacts intelligence—but it wins in the end. It is easy to cut off a prepuce or to put on a brace. But a brace is a prison, and I think a good deal before I condemn a muscle to its confinement.—*Medical News*, July 23, 1887, p. 86.

10.—ON THE MEDICINAL TREATMENT OF EPILEPSY.

By T. C. RAILTON, M.D., F.R.C.S., Senior Assistant-Physician to the Manchester Clinical Hospital for Women and Children.

[The pressure upon our space compels us to reproduce in abstract only the narratives of Dr. Railton's very interesting cases.

Case 1.—A youth, aged 20, had suffered from epileptic attacks both major and minor for nine years. For four months he took bromide of potassium in from 15 to 30 grain doses three times a day with the result that the major seizures were arrested, but the *petit mal* continued. Then for nearly six weeks he was taking prodigious single doses of the bromide, at intervals of four days,

beginning with two drachms and reaching at the end of the period an ounce and a half, which dose made him slightly sick. The *petit mal* was unrelieved, and the only result was a copious eruption of acne, and a condition of great despondency.

Case 2.—This case illustrates the occasionally injurious effects of the bromide even when given in moderate doses, and at the same time it shows the utility of the combination of belladonna with the bromide. E. F., æt. 58, had suffered from minor and major epilepsy for twenty-four years. For seven weeks he took bromide of potassium in 30 grain doses, at the end of which time his memory was practically gone, and he was quite incapacitated for work. The bromide was, however, continued, but in smaller doses, with the result that the seizures which had been in abeyance for nearly six weeks were somewhat increased. The mental hebetude induced by the drug was so serious that it had to be entirely abandoned for a period, during which his general health and spirits greatly improved, but the *petit mal* reappeared. The bromide having been so badly borne, Trousseau's pill was prescribed, viz.: 1-5th grain each of the leaves and extract of belladonna, to be taken every morning. The pill was increased in strength till half a grain was reached. Ultimately he was ordered to take 30 grains of bromide at night, together with the half-grain Trousseau's pill every morning as before. Under this treatment he has been perfectly well for nearly three years.

Case 3.—The third case shows the injurious effects of the bromide when pushed beyond a certain limit, while at the same time it may serve as another illustration of the advantage to be gained by a combination of the two drugs in question. T. A., æt. 40, had suffered from epilepsy ever since he could remember. Had taken bromide, more or less regularly. He had only occasional large attacks, but suffered frequently from *petit mal*. He was ordered 1-3rd grain Trousseau's pill every morning and half a drachm of bromide of potassium twice a day. Afterwards for convenience he took a drachm of bromide at bedtime and half a drachm in the morning, the pill as before. The morning dose was omitted later on because of disagreeable symptoms produced by it. At present he is taking the pill in the morning and a drachm of bromide at night. Has as good a memory as ever he had and has had no attack of any kind for fifteen months.]

It is needless to cite more instances, although I have notes of several other cases which appear to have derived equal benefit from the combination of the two drugs in question. The Trousseau's pill can with safety be given in larger doses than those I have mentioned. I have two patients who are taking $1\frac{1}{2}$ grain pills at the present time without inconvenience. I would strongly recommend a trial of this combined method to those who have obstinate cases of epilepsy under their care.—*Medical Chronicle*, Sept. 1887, p. 454.

11.—ON THE TREATMENT OF LARYNGISMUS, TETANY, AND CONVULSIONS.

By W. B. CHEADLE, M.D., F.R.C.P., Physician to St. Mary's; and to the Great Ormond Street Hospital for Sick Children, London.

[After pointing out the convertible relations as it were of these clinical conditions to each other and their close associations with rickets, Dr Cheadle goes on to speak of the treatment of the allied states as follows.]

The objects to be sought in the treatment of tetanoid laryngismal convulsive disorder of childhood are threefold—(1) to relieve dangerous convulsive seizures when they occur, (2) to ward off these attacks from recurring, and (3) to remove the constitutional rickety state which predisposes to them. For the first purpose:—In laryngismus, a dash of cold water in the face, a hot sponge to the larynx, a finger in the throat to induce the act of vomiting, are approved methods to unlock the dangerous spasms. In general convulsions, the vapour of chloroform may be given between the seizures, or 10 grains of choral and 20 grains of bromide may be given by injections into the rectum, or from 1 to 3 grains of choral in solution injected hypodermically in an urgent case. The latter I have tried once only, but with an excellent effect. It is often impossible to give medicine by the mouth, and a hypodermic injection acts more quickly and more certainly than one into the rectum. For the second purpose (i.e., to ward off attacks) give choral and bromide. Each good, but best both together. They have a marvellous power, chloral especially, in averting tetany and laryngismus, and probably in preventing general convulsions. They must be given in fairly full doses and at regular intervals of sufficient frequency, so that the system is kept constantly under their influence. For a child of six months, half a grain of chloral to 1 or 2 grains with 3 of bromide every four hours. For one a year old, from 1 to 3 grains of chloral with 5 grains of bromide every four or six hours, and so on in proportion. Children bear chloral well. Dr. Wilks gave to a boy three years old with tetany 10 grains of chloral three times a day with the best effect. Bouchut gave 30 grains to children of two to five years, 60 grains to children of seven years, to produce anæsthesia for operation. I should not hesitate to give much larger doses than those I have indicated should urgent symptoms arise. In one case of severe tetany in a boy of two years, in which chloral (2 grains) and bromide (5 grains) given every four hours failed to produce improvement, I gave 1-12th to 1-5th of a grain of Calabar bean with good effect. With larger experience I should try much larger doses of chloral in a similar case before resorting to Calabar bean. Let me give, however, this warning with regard to the free use of bromide and chloral. Bromide in 5 grain doses every four hours

for some days occasionally produces severe pustular rupial eruption. Choral at most induces drowsiness, therefore rather push chloral than bromide in case of necessity. This treatment by sedatives may have to be continued in greater or less degree for weeks and weeks, until the tendency to spasm permanently declines. Thus gaining time by keeping the nervous system in safe quiescence, you proceed to treat the rickety state, the evil condition which underlies and is the prime source of all. For this purpose give milk, cream, or raw meat if milk cannot be borne, with the best kinds of infants' food, or entire wheat flour (rich in phosphates and nitrogenous matter); later, cod-liver oil and syrup of lacto-phosphate of lime or of lime and iron. Another useful adjunct in increasing nutrition and aid in increasing blood flow to the anæmic nerve centres in these cases is brandy, half a drachm to a drachm, given in half an ounce to an ounce of food every four or six hours. It has also another advantage: it acts on children chiefly as a sedative and narcotic, and produces no excitement. And I must enforce the paramount importance of this full nutrient treatment, because there is a common and grave error pervading practice in these cases—viz., that of adopting a spare and lowering diet, such as barley-water, weak broths, and arrowroot. Such had been the medical advice given in the second case which I related: a most pernicious plan, against which I wish to protest as strong as possible—the remnant of the old idea that the morbid condition at the root of the disease was one of plethora and active congestion, instead of debility and anæmia. Moreover, many confound a full nutritious diet with an indigestible irritating diet. Raw meat, for instance, is not indigestible; it is most digestible as well as most nutritious—i.e., the soft pulp scraped free from the fibre; and so with cream. A spare, thin diet, such as veal broth, barley-water, and arrowroot, is no more digestible, and infinitely less nutritious. Let me repeat, then, that the food should be as digestible and nutritious as possible, with a high proportion of animal albuminates and fats. Then, again, this evil of low diet in these cases is constantly heightened by the over-use of strong purgatives and depressant drugs: aiding artificially the very condition of draining off of nutriment and deficient vitality we know to be the prime fault of the disorder. If the immediate exciting cause of convulsion be the irritation of undigested food, a dose of castor oil should of course be given at once; or if there be obstinate constipation, sufficient doses of some simple laxative, such as magnesia, may be given to relieve it, or a single dose of calomel may be useful on occasion. But the free and frequent use of strong purgatives does nothing but harm. Lastly, if diarrhœa be present—and you will remember that it is an almost constant accompaniment of the rickety and tetanoid state—it must be controlled. For it is injurious in two ways: (1) by draining off nutriment from the alimentary canal before there is time for it to be absorbed, and (2)

by the reflex irritation it sets up. For the relief of diarrhœa bismuth is one of the best remedies. It should be given in the form of the insoluble trisnitate, and in full doses; the doses usually given are far too small to be really effective: 4 or 5 grains every four hours to a child six months old, and more in proportion to age, and with it a quarter of a drop of laudanum, or the castor-oil mixture of the Hospital Pharmacopœia, 1, 2, or 3 drachms every four hours, with a quarter to one drop of laudanum according to age; or, if there be sickness with the diarrhœa, from half to 1 grain of grey powder, with from a quarter to half a grain of Dover's powder, according to age, may be given every four hours; or a mixture of chalk and catechu with hæmatoxylum and small doses of tincture of opium, if the alvine discharges are watery and profuse. But astringents are less valuable than drugs like bismuth, chalk, and the sedative opium.—*Lancet*, May 14, p. 968.

12.—ON WAKING NUMBNESS.

By ANDREW H. SMITH, M.D., Physician to the Presbyterian Hospital, New York.

[The author describes an interesting and probably heretofore unobserved condition of numbness, extending over large areas in the limbs and trunk, and unattended by any change in the motor or sensory functions of the parts involved. Dr. Smith narrates four cases which he has either observed or collated from the practice of others. We give here an abbreviated report of his first case:—A gentleman, forty-three years of age, in perfect health, experienced every time he awoke from sleep a sensation of numbness in the ulnar distribution of each hand. Motion, sensation, and the tactile sense were entirely unaffected. Ultimately the conditions spread so as to cover the whole of the upper extremities, the upper part of the chest, and the lips.]

From a study of these cases it is apparent that the numbness is something added to the normal condition, while nothing is subtracted from it. It is a purely subjective condition. There is no paralysis of motion or sensation, the tactile sense is unimpaired, there is no change in the temperature of the affected part, the surface is not blanched or mottled, there is no tenderness on pressure. These characteristics separate this condition widely from those known under the names of night-palsy, local asphyxia, *digiti mortui*, Raynaud's disease, erythromelalgia, and from the various paræsthesias and acroneuroses heretofore described.

Doubtless the conditions upon which the numbness depends are present during sleep, but the sensation is not sufficiently strong to arouse the sleeper, and he first becomes conscious of it when awakened by some other cause.

The cause of this condition is probably central, since the effect is

usually symmetrical. It would seem to be connected with the lowering of the circulation which takes place during sleep, and to disappear when the circulation returns to the waking condition, whether the return be spontaneous, or the result of rubbing, &c. As to the latter, it is doubtful whether it has any other effect than that upon the general circulation which the muscular exertion would necessarily produce.

As for treatment, in the only case in which the condition existed by itself, and independently of more serious conditions, ergot, digitalis, strychnia, and aconite were tried at different times, but without result. The inconvenience produced by the affection was so slight, that no treatment was carried out efficiently, so that even these negative results were of no value. In each of the other cases there was a diseased condition present, to which the numbness was subordinate, and which afforded the indications for treatment. In proportion as the treatment of the underlying condition was successful the numbness disappeared. If it be true that the cause is central, no local treatment is likely to be of service.—*International Journal of Med. Sciences*, April 1887, p. 412.

13.—ON HEMIPLEGIA IN CHILDREN.

By JOHN ABERCROMBIE, M.D., F.R.C.P., Assistant-Physician to the Great Ormond Street Hospital for Children, London.

[The following is an abstract of a clinical lecture. Dr. Abercrombie's discussion of the various theories held in regard to the nature of the initial lesion in cases of infantile cerebral paralysis is omitted for want of space.]

The causes of hemiplegia in the adult are hemorrhage, arterial obstruction whether from embolism or thrombosis, and tumour; and all these causes may be found in operation in childhood. Cerebral hemorrhage in infants must be exceedingly rare, and is very uncommon in children; almost the only known causes are purpura hemorrhagica, the hemorrhagic diathesis, or aneurism of one of the cerebral arteries as a result of pre-existing heart disease, and in a very few instances a highly vascular sarcoma has given rise to a large extravasation of blood into the brain. It is conceivable, too, that massive hemorrhage might take place in whooping-cough, but I do not know of any instance of its occurrence. Meningeal and capillary or punctiform hemorrhages will require separate consideration.

Tumours are not uncommon in children, and there is no reason why they should not occur sometimes in the motor area of the cortex, or somewhere in the motor path between this and the base; they are more commonly found, however, in the pons or crus. The same symptoms are produced in the child as in the adult, and no further reference need be made to them.

It is just worth mentioning here, as the point will not be again referred to, that cases of tubercular meningitis are not infrequently first betrayed by one-sided paralysis.

We have now run through the ordinary causes of hemiplegia in the adult, but I have only accounted for a very few of the cases, some fifty in number, of which I have notes. The remaining cases may be conveniently divided into two groups, those which succeeded one of the acute infectious diseases, and a much larger group where no such cause could be assigned.

Measles, scarlet fever, whooping-cough, and diphtheria may all be followed by hemiplegia. Diphtheria, if I may judge by my own observation alone, is a more common cause than any of the preceding, but it is often very difficult to get the necessary amount of evidence respecting the primary ailment.

Of the remaining cases there was evidence of congenital syphilis in four, and there was good reason to attribute the paralysis to this cause. In three the paralysis dated from quite early infancy, having as usual been ushered in by fits. Syphilis may have had a share in some of the other cases also, as two of the children in whom the paralysis followed measles were certainly syphilitic, and consequently may have had disease of their vessels, whilst it was a possible factor in other cases.

The remaining cases would seem to fall into three groups, namely, the traumatic, the congenital, and those which are neither traumatic nor congenital, and yet own none of the causes which we have been discussing. I have only seen one case where the paralysis could with reasonable probability be set down to a traumatic cause, though in some cases there can be no doubt that injury done during labour, especially when forceps have been used, has been the cause.

The remaining cases only permit of one subdivision, namely, into those which occurred before the age of two years, and those in which the paralysis did not show itself until after that date. Of the former class I have notes of fourteen cases, and since these are essentially the cases of infantile cerebral paralysis, it will be worth while to spend a little time over them. The following cases illustrate the mode of onset. Edith A., brought at the age of two years, with well-marked left hemiplegia; when ten months old she had a fit, lasting about a quarter of an hour; both sides were convulsed. Three weeks later, when apparently well, she was again seized with convulsions, which lasted a whole week; the left side was almost exclusively affected, and from that time she was paralysed on this side.

The paralysis is not often permanently complete, and rigidity is seldom wholly absent; sometimes the rigidity is much increased, or only recognisable by manipulation of the paralysed limbs. Sometimes the paralysis is very slight, but the affected limbs are the seat of movements, a condition known as athetosis when the movements

are slow, or post-hemiplegic hemichorea, or mobile spasm (Gowers) when the movements are more rapid.

Of the fourteen cases ten were girls, a much larger proportion than can be the consequence of mere accident; and, moreover, it is in corroboration of the fact already noticed by Dr. Gowers, that in children under five, hemiplegia is twice as common in girls as in boys. In several of the cases the intellect was seriously below par, some of the children being absolutely idiotic; only a very few presented no evidence of mental deficiency. But it must be remembered that by reason of their paralysis these children had been unable to mix with others, and their education had almost always been neglected, so that their backwardness may in part have been due to want of opportunity. The fact, however, remains, that the intellect is much more liable to be affected in the hemiplegia of children than in that of adults.

In all cases improvement was much more marked in the leg than in the arm. Arrest of development of the paralysed limbs was noticed in some of the cases, the arrest falling on the bones chiefly. No obvious muscular wasting was found, and there was a good layer of subcutaneous fat even on the paralysed side. In a large majority no evidence of neurotic tendency could be elicited, but in one of the cases it was stated that all the children in the family (and they were many) had cut their teeth with fits; in two instances there was a suspicion of syphilis. Only four cases fall into my last category, that is, children in whom the paralysis was not developed until after two years of age. In two the paralysis succeeded epilepsy, the third was remarkable not only because the arm was much more affected than the leg, but because aphasia was the chief symptom throughout, and persisted after the paralysis had passed off. In the fourth the question of hysteria cannot be wholly excluded. The patient is a little girl, aged $8\frac{1}{2}$ years, who was frightened three years ago, and has had weakness of the left arm ever since, and movements have been gradually coming on. She is said to have had hysterical fits, though I cannot say exactly what is meant by that expression. She has choreiform movements of the left hand, neither slow nor rapid, and is only able to use that hand clumsily and feebly; she drags the left leg a very little.

To sum up briefly the symptoms of this form of paralysis in children, we may say that it usually attacks children under one year of age, commencing with a prolonged convulsion, lasting for several hours, and sometimes even for some days, the convulsion being frequently limited to the side subsequently found to be paralysed, though often at first general. When the fit passes off the child is found to be paralysed on one side, and may have lost his speech, or his reason, or both. Sometimes the child comes out of the first fit unharmed, but is left paralysed by a second or subsequent seizure. A little improvement, especially in the leg, may be looked

for early, but complete recovery is not common; arrest of growth of the paralysed limbs, a certain amount of rigidity, and clumsy, irregular movements are frequently met with. Sensation in the paralysed limbs is rarely affected. The face is occasionally paralysed on the same side as the limbs. Unilateral atrophy of the skull on the side opposite to the paralysis is sometimes very marked. The paralysis may come on after one of the acute infectious diseases, or as a result of syphilis, but in a considerable number of cases no cause can be found.

If we now turn to inquire what is the pathological condition underlying these cases, we find that, after a considerable lapse of time at any rate, there is a singular uniformity in the appearances; atrophy and sclerosis of the convolutions in the motor area of the hemisphere opposite the paralysed side is the almost invariable result, with thickening and opacity of the meninges, and changes in the vessels. The opportunity for making an examination in the early stages is so exceptional that great doubt has arisen as to what is the actual condition of things at first, and there is much diversity of opinion, even amongst those who have had the largest experience. For instance, according to one authority, an acute inflammation of the multipolar cells in the cortical grey matter is the initial change, a lesion exactly analogous to that in the spinal cord in the ordinary infantile paralysis. According to another, capillary hemorrhage into the brain would explain all the cases, while another finds that hemorrhage into the meninges and consecutive meningo-encephalitis is the first change. Another regards thrombosis of the veins and sinuses as the primary lesion, whilst others express their belief in embolism or thrombosis of the arteries. These diverse and diverging views are held by men of the greatest eminence, and as they cannot all be right—and it seems impossible that they should all be wrong—the only legitimate conclusion is that several different causes may terminate in the same result.

I need say very little about the congenital cases; the pathological conditions found are often much more extreme than in the acquired forms; complete absence of portions of the brain or a large serous cyst are amongst the most usual forms, and in these there is often a considerable increase in the thickness of the skull in the corresponding region. These changes may be due to injuries received during delivery, followed by hemorrhage into the meninges, or to intra-uterine injury with a similar result leading to arrested development. There can seldom be any difficulty about the diagnosis. Infantile spinal paralysis is very rarely confined to one arm and leg on the same side; and, if it were, the affected limbs would be flaccid, wasted, and cold. Flaccidity and wasting are not met with in the cerebral form; on the contrary, the general nutrition of the limb always remains good, and there is always more or less tendency to rigidity; sensation is rarely affected, and the electrical reactions

are unaltered. Disturbances of speech or intellect are common, and the growth of the affected limbs is often impaired; in cases that date from early infancy, the skull on the side opposite the paralysis may show some atrophy, and the circumference on this side of the head may be smaller than on the other.

The prognosis as regards life is good; children rarely die during the initial convulsion, or, if they do, it is before the nature of the affection has been recognised. The bodily health is speedily restored and maintained, and when the intellect has not been affected the child may grow up to be a useful member of society; the leg usually shows some sign of improvement early, and may recover, the arm is much less likely perfectly to regain its strength; when choreiform movements or athetosis have once developed, as a rule, they persist.

During the fit we might put the child into a bath, using a warm one if the temperature were not raised, or if any fever were present a cool bath proportionate to the degree of fever. In the uncertainty which exists as to the exact pathology, there is little else we could do with safety or advantage; to abstract blood would, in the case of embolism or thrombosis, only tend to make the clot firmer, but might be beneficial in a traumatic case, where presumably there is some meningo-encephalitis going on; a blister behind the ear on the side opposite to the convulsed limbs which do no harm and might do good; and of course any source of reflex irritation—teething, worms, etc.—would be sought for, and, if present, relieved as far as possible. After the convulsion a prolonged course of iodide of potassium and alkalies would be the best line to follow, and it is surprising how well children take the iodide, even when administered in an unsparing manner. I have only once known iodism produced, and that was in a little girl nearly three years old, who had been taking three grains of the iodide every six hours for about a fortnight. When there is marked contracture, faradisation of the non-contracted muscles will be found useful.—*British Medical Journal*, June 18, 1887, p. 1323.

14.—ON PAINLESS TIC OF THE FACE, AND ITS TREATMENT BY FREEZING WITH RHIGOLENE SPRAY.

By S. WEIR MITCHELL, M.D., Philadelphia.

The symptoms of the clonic form of facial spasm of which I am now speaking have been over and over again described, but there remain, nevertheless, some points in connection with this disorder which I do not see spoken of in the descriptions given by the various authors who have written on this subject.

Facial tic of the type under consideration is apt to be increased by moderate emotion, as meeting strangers and becoming conscious of observation. Extreme emotion will occasionally suspend it, as

it will the wildest local chorea, of which I have elsewhere related a striking case. It is, I think, unnoted in the classical accounts, that in some cases mastication, deglutition, laughter, or talking are competent to cause attacks in persons affected with tic. I observed, also, that the first jet of rhigolene spray caused a violent facial spasm in two of my cases. In some tic patients walking brings on an attack, and any violent motion does the same.

If we conceive of a motor face centre as in a state to discharge energy at any moment, and needing but the least irritative contribution to cause spasm, we shall have a fair mind image of the state of things described. The act of speech, mastication, laughter, all motion in fact, all emotion, the sudden chill of rhigolene, give rise to overflows of nerve energy which sweep over the whole nervous system, and contribute enough added stimulant to excitable centres to occasion spasmodic action in related muscles.

This seems to me to be the mechanism by which we may explain the action of motion, sensation, and emotion in bringing on the attacks of tic in persons subject to it. Like overflows seem to be able to reinforce already irritated sensation centres so as to cause pain, because in trigeminal neuralgia mastication, speech, and laughter seem all to be capable of suddenly bringing on pain fits.

As one of the curiosities of the subject, I may add that the disease is sometimes suspended by a grave, intercurrent malady—as pneumonia—and sometimes cured as by typhoid fever. It has been my lot to see many bad cases of tic, of some of which I have kept notes, but I have never cured, or greatly aided, a case of long standing which was not due to hysteria.

I have never been forced to stretch the facial nerve as a remedy, but have seen an example of perfect success in a patient of my colleague, Dr. Sinkler.

A few months ago I saw in a middle-aged lady a case of unilateral facial spasm, which set me to thinking afresh whether I might not be able to relieve her, and it then occurred to me that it might be possible to lessen the conductivity of the facial nerve by other means than stretching it, and that if I could freeze it where it spreads out on the face I might effect some good in this disagreeable malady. A little reflection, or, indeed, the use of my own memory, would have told me that with the means employed I should not be able to freeze so deeply as to produce what I expected, a congestion of the nerve I meant to freeze.

By placing a finger within the cheek and freezing the outside with the spray, it is easy to discover, as I myself found, that the deepest freezing possible with rhigolene does not extend through the thickness of the cheek, so that my expectation of thus directly affecting the nerve was futile, and any explanation founded upon a belief that the nerve was frozen must be laid aside. Whatever effect I did produce—and it will be allowed that it was somewhat

interesting and remarkable—must have been due to a quite superficial freezing, and probably to reflex effects exerted through the trigeminus.

The first case in which I employed this agent was that of Mrs. B., aged 60. The lady applied to me on November 4, 1886, the victim of a painless tic of the right face, which occurred at intervals, and had lasted for four years; never absent for more than half-an-hour of the waking day, it returned in spells, which persisted a few seconds at a time, and repeated themselves about fourteen times in a minute, after which there was apt to be a period of rest. The excursions of the face were most extreme, and seemed to affect all the muscles of the face so as to distort it for a time, closing the eye on that side in a most inconvenient fashion. Absent during sleep, it returned within an hour after waking, and, like neuralgia of the fifth nerve, was apt to be brought back or increased by the acts of talking, laughing, or eating. The lines of the face on the side of the spasm were a little more deeply marked than on the other, and the faradic reactions were distinctly better. She was somewhat sallow, but her blood count showed no marked anæmia, and, except an occasional trace of albumen in the evening, her urine was without casts. As to the cause of this unpleasant malady, I could not even make a reasonable guess; nor was there in the state of her teeth, her eyes, or her general health anything which explained it. I should add, as regards the spasm, that it was not capable of being reinforced by distinct muscular acts, nor did it seem to me, though of this I was not sure, to be competent to reinforce the knee-jerk.

After using the spray for the first time, she returned the next day, telling me that for two hours after its use there had been no spasm of the face. After five sprayings, on successive days, the face ceased to make any violent movement, the spasms became less and less severe, and, after fourteen applications, were confined entirely to the muscles around the eye, which ceased now to close that organ convulsively. At this time, having satisfied myself of the value of the local remedy used, I began to give tincture of chloride of iron internally, and malt extracts for the purpose of improving general nutrition. After twenty freezings had been used on successive days her condition was so satisfactory that she declared the spasms rare even under the eye, not more than a dozen times a day, when usually their recurrence could be traced to the act of mastication, or, at all events, to eating. She was now absent for seventeen days, and, on her return, exhibited no change for the worse. For a few days the freezing was renewed, when I again allowed her to abandon the spray, as she declared herself entirely satisfied with the result, even if no larger good were gained. I directed her, on her return home, to apply ice and salt to the face daily over the region of the *pes anserinus*. This, how-

ever, made her face so very sore that she had to poultice it at one time, and, after twenty applications, at various intervals, she abandoned the use of this form of cold.

On May 2nd, of this year, she returned to me in very good condition, certainly very much improved in general health and appearance, and with so small an amount of spasm as to satisfy her that no further treatment was necessary. I advised, however, that the spray should be applied by her physician thrice a week, but as long periods had elapsed without any form of application of cold, it seems probable that we may reasonably expect her to remain relieved. This case was valuable to me, and interesting because it was the first time I had, in a large experience, succeeded in relieving a facial tic.

In the second case, that of a lady, aged 69, I was less fortunate, perhaps because the malady had lasted so long. In this distressing case rhigolene spray was used assiduously seventeen times. No better effect was obtained than so far to lessen the spasm as to prevent, up to this time, the constant closure of the eye during the attacks. Beyond this I could see no gain, although she herself, and her family, insisted that the attacks were rather less frequent and less violent.

I should have preferred to wait for other opportunities before publishing the successful result of a single case; but painless tic, severe enough to seek aid, is rather rare, and I therefore give this example without claiming for the spray any more than what is here set forth. No doubt others will test its value, and we shall soon know if mine was, for some reason, a mere piece of good fortune.

A word as to the method of using the spray. Rhigolene is by far the best agent, far better than ether, and it is possible that in sudden freezing we have a therapeutic means too much neglected. Used alternately with heat, it certainly is of value in neuritis, and certain neuralgias.

When employing the spray for tic, I use it over the expansion of the facial, and over the exit points of the fifth nerve. The reaction is intense, and the part sprayed remains deeply flushed. When it becomes sore, it is only needful to avoid the tender region for a day or two.

The nature of the influence thus exerted, and probably affecting most the sensitive nerve, is but a matter for speculation. It is some time after the spraying before the maximum effect is obtained in the way of lessening the spasm, and this fact reminded me of the interesting results obtained by freezing the skin in birds, when often ten minutes elapsed before the convulsive acts thus produced in birds were to be seen. No such extreme phenomenon follows the use of the spray in man or quadrupeds, but, without doubt, even in these surface freezing must profoundly affect the centres.—*Medical News*, Sept. 3, 1887, p. 253.

15.—ON “ANALGESICS.”

By JOHN KENT SPENDER, M.D.Lond., Physician to the Mineral Water Hospital, Bath.

[The following excerpt is taken from a characteristic and eloquent paper read at the Brighton meeting of the British Medical Association in 1886. Addressing himself specially to hypodermic medication, and the administration of small doses. Dr. Spender says:]

The administration of medicines by the method of comparatively small and frequent doses has occupied my thoughts for fifteen or sixteen years. The object of the method is shortly this. In a certain number of cases it can be demonstrated that we can get by it nearly all the possible medical good from a drug with the least possible harm; for every potential drug has some shadow of harm going along with it, and this not only when prescribed in an obviously wrong way, but even when ordered according to the common-place style of a medium official dose every four or six hours. A quarter of a grain of tartrate of antimony every four hours will mostly cause horrible sickness and depression; but 1-16th of a grain every hour for sixteen hours may be taken with no more physiological disturbance than if we had given so many rations of cold water, and the remedial effect is superior. And so with opium. When we deem it most safe and effective to administer opium by the mouth as our analgesic weapon, we can do so with extraordinary advantage by giving 1 minim of the wine of opium every five minutes for half-an-hour, then every ten minutes for the same time, afterwards every fifteen minutes, and so on, withdrawing our remedy by degrees according to the result produced. In this manner we compass that therapeutic end which Dr. Anstie told us to search for—the stimulating power of opium, with as little as possible of its shock-like or deadening power, as represented by sickness, or faintness, or sweating. But there are cases in which the patient counts minutes rather than half hours, as if the pain were more depressing and deadening than any antidote could be; and then it is sound practice to administer half a grain of powdered opium every thirty or forty minutes, until the body is warm and the pulse rises. During this ministry of healing the sufferer is presumed to be in bed, and in a temperate, quiet room.

Time fails me to illustrate this principle in the administration of other medicines; but some analgesic properties of no mean value may be found in the hydrate of chloral if 5 grains be taken every hour for five or six doses. So likewise of Indian hemp; 5 minims of the tincture every hour for seven or eight times generally succeed in mitigating the expulsive tortures of dysmenorrhœa. Dr. Anstie prescribed small and frequent doses of this medicine for certain forms of headache. I cannot help being pleased with the fact that the principle and practice which I advocated in the

British and Foreign Medico-Chirurgical Review nearly fifteen years ago have at length been recognised and sanctioned in all authentic text-books.

That derangement of motor force which is called spasm generally causes pain, not originating in the cerebrum, but as the result of bruised and squeezed nerves in the structure of muscle. Here, then, we must search for a different class of remedies, not primarily analgesic, but analgesic in the secondary sense of unlocking that terrible grip of cramp and convulsion which creates the pain. Belladonna has been praised by many writers for its control of asthma, intestinal colic, and constipation. So far as Calabar bean influences the awful agony of tetanus, it must act in the same way; and I once suggested that as ergot raises motor force to a remarkable degree, there is an *a priori* probability that it may cure pain by raising the energy of sensation. There is no room on the present occasion to discuss how far the same purpose is served by hemlock, henbane, stramonium, valerian, and camphor; and we have only just time to hint that careful search is still needed on the manner in which pain is blunted by alcohol, guarana, coffee, and tea. Cod-liver oil must act—at least, partially—by improving the textural integrity of the nervous structure (central and peripheral). And the astonishing way in which pain can be tamed down by blood-letting and purgatives shows how much it depends on what is called vascular tension.

The last point which I venture to introduce is the combination of analgesics, and the economy of therapeutic force which is exemplified by giving at the same time medicines of different shades of anodyne action. Thus, bromide of sodium and morphine make an analgesic compound which has few competitors; and Dr. John Harley says that the addition of henbane to opium produces the best possible hypnotic action. When belladonna is combined with opium, we sometimes obtain the most good from each drug with the least harm. Hemlock is of value in augmenting the power of more decisive “anti-neuralgic remedies.” Visceral neuralgias are appeased by hydrochlorate of ammonia, iron, and strychnine. The neural trouble of herpes zoster is wonderfully controlled by quinine and arsenic. An efficacious treatment of gout used to be by quinine and colchicum. But I must close my list of illustrations by a bare reference to bromine and camphor, lobelia and stramonium, belladonna and chloral; and simply add my conviction that in no branch of our therapeutic work is there more legitimate ground for extension than in joining together things of different constitution and yet similar action. And I have not time to do more than express a hope that some here to-day will speak from a larger experience of cucaine, electricity, heat and cold, blisters, and mineral waters as essential parts of our apparatus for gaining a mastery over pain.—*British Medical Journal*, April 16, 1887, p. 821.

16.—ON VARIATIONS IN THE FREQUENCY AND RHYTHM OF THE PULSE.

By W. H. BROADBENT, M.D., F.R.C.P., Physician to
St. Mary's Hospital, London.

[Dr. Broadbent's first Croonian Lecture, of which the following excerpt forms the concluding part, is devoted mainly to the consideration of the mechanism involved in the production of the pulse. Some common misconceptions as to the nature of the pulse are also dealt with and explained. It is shown that the pulse is not an increase in the diameter of the vessel, but an increase of the blood pressure within it created by the systole of the ventricle of the heart. The lecturer says :—"The pulse indicates simply the degree "and duration of increased pressure in the arterial system caused by "the ventricular systole. There is a certain mean blood pressure "maintained by the elasticity of the large arteries, varying greatly "in different individuals, which keeps up the flow through the "capillaries, and the level of which is determined by the resistance "in the capillaries and the amount of force stored up by the elastic "walls of the large arteries. This pressure is lowered by the out- "flow through the capillaries into the veins, and is reinforced by the "successive contractions of the left ventricle, and the pulse marks "and indicates the minimum and maximum pressures, with the "gradation from one to the other. The term 'tension,' as applied "to the pulse, means simply the degree of fluid pressure within the "artery, putting its walls on the stretch. Distension might, perhaps, "be more expressive than tension, if less exact and technical." (Dr. Broadbent's second lecture on this subject is given in Art. 17. See also *Synopsis*.)]

Frequency.—The rate of the heart's action, with which the frequency of the pulse corresponds, is governed by various influences. Resistance to the onward current of blood in the arteries, or, in other words, increase of pressure in the arterial system, whether produced by compression of large vessels, such as the femorals and brachials, or by obstruction in the arterioles and capillaries, tends to slow the action of the heart and render the pulse less frequent, and, conversely, diminished resistance or lowered tension accelerates the heart and pulse rate. But more direct and powerful than these varieties of the arterial pressure, and entirely overruling their tendency, are nervous influences, of which the channels are the pneumogastric and sympathetic nerves. It is not my intention to enter at all upon a discussion or explanation of the respective action of these nerves; this would help us very little clinically, and knowledge with regard to them has not yet reached a perfectly stable condition. The question, too, is rendered complex

by the fact that nervous influences reach the arterioles and capillaries as well as the heart, and modify the outflow of blood and the arterial tension; and an effect upon the heart, apparently direct, may be brought about indirectly through variations in the degree of resistance in the circulation. Almost all departures from a normal state of health are attended by increased frequency of the pulse, and it would serve no useful purpose to enumerate and attempt to classify the causes of pulse frequency, while its prognostic indications are so varied and delicate that they would elude description. They are, besides, among those matters of experience which are independent of scientific investigation, and are excluded under the rule which I have taken for my guidance. There are, however, cases in which frequency of the pulse, or rather of the heart's action, constitutes in itself the disease, or if not actually the disease, yet at least a source of danger and suffering. Such frequency is one form of palpitation of the heart. The fugitive attacks of hurried and violent action of the heart, induced by indigestion or emotion or over-exertion, need not occupy our attention; and I shall not do more than allude to the persistent frequency of the pulse in Graves' disease, or in hysterical conditions, or associated with aortic pulsation.

Persistent frequency of pulse.—Persistent frequency of pulse is one of the consequences of over-strain of the heart by exertion. It is met with in young men who have over-taxed their powers in rowing, training for races, or heavy gun drill, and was observed on a large scale in the American war. The name "irritable heart" employed as a descriptive term may very well be accepted. Besides the beating of the heart of which the patient is conscious, there are breathlessness on exertion, nervousness, depression of spirits and anxiety, sensations of faintness, sleeplessness, and incapacity for sustained exertion. In all the cases of this kind which I have seen, the pulse tension has been high. The great remedy for this condition is rest, and from one to three weeks in bed, however irksome and wearisome at this period of life, may be well spent in allowing the heart to settle down. During and after middle age, persistent frequency of pulse may be induced by a single act of excessive exertion, such as running to catch a train. The effects upon the heart of such an imprudence vary; there may be dilatation of the heart, with or without insufficiency of the mitral valve, or a valve may be actually damaged, or the action of the heart may become irregular; but, besides these, it may become hurried without irregularity, and the frequency may persist till the strength of the patient is worn out. Here, again, the arterial tension is, according to my experience, high, spasm of the peripheral vessels contributing to the effect, so that the distension of the arteries is not simply the result of blood being driven into the arterial system in consequence of the increased frequency of the

heart's contractions. No satisfactory explanation has been given of these cases, and I have none to offer. Perhaps the most plausible is that the plex of minute nerve-ganglia and network of fibres so copiously distributed beneath the endocardium may have been stretched and rendered unduly irritable.

Paroxysmal palpitation.—It is late in life that paroxysmal palpitation with frequency of pulse is most commonly a cause of suffering and danger, shortening life and rendering it miserable. It may complicate heart disease of any kind, and may possibly sometimes be one of the consequences of the disease, but it may occur independently of valvular affection or of any structural change sufficiently advanced for recognition, and it has seemed to me that when disease of the heart is present the palpitation is often rather a complication than a consequence. The exciting cause may be indigestion and flatulence, or the mere act of taking food, lying down, emotion, apprehension of an attack at a particular hour or under given circumstances associated with former attacks; but, whatever this may be, the onset of the paroxysm is frequently accompanied by a sudden relaxation of the arteries, and the palpitation seems to resemble the excited action of the heart set up by nitrite of amyl or nitro-glycerine. Resistance to which it is habituated is suddenly removed, and the heart starts off like the engine of a locomotive when the wheels fail to bite the rails. In the course of a prolonged attendance upon a medical man advanced in years and long subject to gout, who suffered greatly from palpitation, this occurred more than once; when my hand was on the pulse the artery became large and soft, there was a flutter of the heart, which then bounded off. A remarkable complication occurred in this case which is worthy of being related. Early one morning the patient began to bring up bloody fluid from the lungs, and in the course of twenty-four hours expectorated several pints of it. A pink froth covered the bright-red liquid to the depth of half-an-inch, and the whole looked very much like the boiling red-currant juice in the process of making jelly. There was no rise of temperature, the flux of blood-stained serum gradually ceased, and palpitation did not recur for several months, when, after imprudent fatigue and exposure, it returned, and ultimately wore out the patient. It should be added that there was no valvular disease, and only moderate dilatation and hypertrophy with old-standing high arterial tension.

There still remains for notice the extraordinary rapid action of the heart, which can only be referred to some neurotic condition, lasting for days or weeks or months, of which numerous examples are on record. One of the most remarkable is that recently brought before the Neurological Society by Dr. Bristowe, to whom I am indebted for the following particulars: The patient was nineteen years of age, and there was reason to think that the affec-

tion dated from the age of eight, the attacks of rapid action of the heart recurring from time to time. When he entered St. Thomas's Hospital, he was suffering from anasarca and pulmonary apoplexy, which had supervened in the course of an attack which had lasted some months. The pulse varied, but often numbered 200 or 240. Under the influence of iron and digitalis, the action of the heart quieted down to about the normal, but was easily excited, and during one visit to the hospital the beats were counted at the rate of 304 or 308 a minute. He had resumed work as a draper's assistant, and on February 26th was at work till midnight. Next morning he did not seem much the worse for it, but at midday, while playing the piano, he suddenly stopped and fell down dead. The heart was somewhat enlarged and dilated, but the valves were normal, and no other disease was discovered.

Several cases have come under my observation in hospital or in consultation of which the course and sequel have not been known to me. In one seen with Mr. Stanley Smith in the course of last year, the patient, a lady aged sixty-four, died after seventeen days' illness, during which the pulse ranged from 150 to 200, the heart being apparently worn out. In one case I saw the patient, a lady of about forty-five, almost daily for about three weeks. The pulse was never under 200, usually 240, and there was every reason to believe that the heart was beating at the same rate during the whole of the time. The artery was small, full between the beats, not easily compressible, and the pulsation felt more like a vibration than a beat, and gave the impression of there being little or no onward propulsion of the blood. The heart sounds were short and equi-distant, and reminded me of the puffing of a distant locomotive. There was no opportunity of examining the pulse or heart during sleep, but the sleep was broken, and the feelings attendant on the palpitation were always present. This was a second attack after an interval of some years. I saw her in the first, which lasted about five days, and left her looking old and worn. She survived the second for at least two years, since which time I have not heard of her.

This rapid action of the heart is, so far as I know, unexplained, except by referring it to some obscure neurotic influence. It is met with almost at all ages (Dr. Bristowe's patient appears to have been subject to it from the age of eight, and died of it at nineteen, and I have seen it in a child of ten), although it is more common after middle life than before; usually there is some apparent exciting cause, such as would put stress upon the heart; overwork and anxiety are the most common, but the predisposition, which is of more consequence, eludes us; sooner or later sudden death is the result.

It is interesting to speculate on the condition of the circulation. Clearly it is not accelerated, and the dropsy in Dr. Bristowe's and

Dr. Seccombe's cases show that the tendency is to stasis. The pulse, too, gives one the idea of vibratory alternations of pressure with little onward movement. The question then arises, What is the condition of the left ventricle? Either it does not fill in diastole, or it fails to empty itself on systole. It may be that in some cases it is contracted, and refuses to dilate to receive blood from the auricle, and that in others it is in a state of over-distension; but it seems to me that the former is the more probable condition. I have usually found the heart of normal size, whereas persistent distension would sooner or later give rise to dilatation. Again, the cardiac impulse is often extremely powerful—I have seen the stethoscope lifted through a woman's stays—and this is inconsistent with over-distension. It might be asked, again, whether the peripheral arterioles and capillaries played any part in the phenomenon, or the pulmonary circulation? These are questions which I am unable to answer, and it is a satisfaction to me to know that the subject is engaging the attention of Dr. Bristowe. —*Lancet*, March 26, 1887, p. 610.

17.—ON THE FUNCTIONAL EFFECTS AND TREATMENT OF HIGH ARTERIAL TENSION.

By W. H. BROADBENT, M.D., F.R.C.P., Physician to St. Mary's Hospital, London.

[In his second Croonian Lecture, Dr. Broadbent deals exhaustively with the subject of high tension. The causes of the condition are first dealt with in detail. Enumerated, they are as follows:— 1. Heredity. 2. Kidney disease of all kinds, except such as is attended with suppuration. 3. Gout and allied conditions, including almost the entire range of affections attributed by Murchison to functional derangement of the liver. 4. Lead-poisoning with or without renal disease or gout. 5. Anæmia (perhaps through imperfect oxidation). 6. Pregnancy. 7. Constipation. 8. Plethora—an overlaid state of the entire vascular system. 9. Chronic bronchitis and emphysema. The effects of high tension on the heart are next dealt with and explained. (See also *Synopsis* of this volume.)]

Without recognisable organic change in the heart or arteries, or where the subsequent history shows that such changes as were present were not of themselves the cause, high tension may give rise to the most severe angina pectoris. High tension, again, may produce effects in the way of breathlessness and sudden powerlessness which simulate the effects of the most advanced heart disease. Intermittent functional albuminuria, when not traceable to imperfect assimilation of food, is, so far as it has come under my observation, associated with high pulse tension, and is most readily amenable to treatment which reduces arterial pressure; and th

cases of this affection, described by Dr. Clement Dukes of Rugby, and shown in his admirable papers on the subject to be common among boys and adolescents, appear to belong to the same class as mine. When this liability to the appearance of albumen in the urine on exertion or slight exposure is met with in children, I have always found a strongly neurotic family history, as well as hereditary high pulse tension. When it does not come on till the approach of adolescence, there may be no family neurosis, but I have never failed to recognise tension, and to trace its effects in other members of the family.

Although high arterial tension is fraught with so many evil contingencies, it is not to be looked upon as *hostis humani generis*, and attacked whenever found. I have already stated and exemplified by cases that, supposing renal disease or gout to exist, the prognosis is unfavourable if the pulse tension is not high. This is equivalent to a declaration that under such circumstances the high pressure in the circulation serves some useful end. We do not, therefore, treat tension as such, unless it is actually causing suffering, or doing present or prospective harm. For the most part, indeed, the object of our treatment is to remove the condition on which unduly high tension depends.

Among the measures for the reduction of tension, one of the most potent is bleeding. This is usually practised only in extreme cases, and when it is employed it is as a remedy for the high tension itself, or for some of its more serious and dangerous effects, such as convulsions. When cerebral hemorrhage has occurred it is too late to bleed; but were high tension in the pulse more closely studied, and were less attention paid to the public prejudice against venesection, it would be anticipated and prevented in hundreds of cases every year. Physiological experiment seems to throw doubt on the production of a rapid diminution of pressure in the arteries by bloodletting, but there can be no question as to the effect in the mind of anyone who has practised venesection in a case of uræmic convulsions. The results are more than can be easily attributed simply to the withdrawal of so much blood. In acute nephritis, when bleeding has been necessary because of convulsions, I have more than once seen unaccountably rapid disappearance of the albumen from the urine, and complete recovery. The statement made by trustworthy observers, when bloodletting was common, that at times patients could not be got under the influence of mercury until they had been bled, and that then salivation was induced at once, is evidence of some profound change in the system; possibly a more rapid absorption resulting from the diminution of intra-vascular pressure may enter into the explanation, and the taking up into the blood of fluid effused into the cerebral meninges or ventricles. The spring and fall bleeding of our forefathers must have been a great relief to many of those upon

whom it was practised, and in some I have no doubt it prolonged life. I have had under my care from time to time an old lady, the only clue to whose age is the fact that her father, who was a historical character, died in 1803, who had been bled fifty times, first for puerperal convulsions and for their prevention afterwards. The punctures at the bend of the elbow had been so numerous that there was no room for more, and the later bleeding had been done from a vein in the foot. I do not think the old lady would have been living now but for the bleeding. When I last saw her, about two years since, she was managing the family of a deceased daughter. All her children are dead; the last, a daughter, who was the only one I saw, died from chronic Bright's disease; her grandchildren by another daughter, who died in childbed, are the subjects of high tension.

Apart from bleeding, tension can be lowered by reducing either the force of the heart or the resistance in the periphery. The former method can be called for only in some emergency, such as threatened cerebral apoplexy, and, if employed, will lay the heart open to dilatation, unless the obstruction with which it is contending is also removed. The latter is the chief indication to be followed, and it can be met in two ways: either by drugs, which relax the minute arterioles—such as amyl-nitrite, nitro-glycerine, and the nitrites; or by modifying the blood condition, which provokes the obstruction in the arterio-capillary circulation. The remedies which relax the arterioles are invaluable where either there is active arterial spasm, which is of itself a cause of pain and danger, as in angina pectoris, or when the contraction of the arterioles, without being abnormal in degree, is contributing to overpower the heart. They may thus be of service in high tension of renal origin, and are said to have contributed to the cure of diseases of the kidneys. I have administered nitro-glycerine repeatedly in different forms of renal disease, but without any other effect than temporary relief of some of the symptoms, and improvement in the patient's appearance from the admission of more blood to the pallid surface. I am quite prepared to believe, however, that continued diversion of blood from the diseased organ, which will be one effect of the general relaxation of the arteries, may favour their return to a normal condition.

The blood condition which gives rise to tension I have already stated to be, in my opinion, the presence in it of some form of impurity, and for the most part nitrogenised waste. The treatment demanded, then, is simply elimination. When the cause of this is disease of the kidneys or liver, the primary object of the treatment will be its cure; but side by side with this, and often, indeed, forming a part of it, will be required measures for the removal of the matters which are retained in the blood in conse-

quence of the suspension of the functions of these organs. Any or all of the eliminating organs and surfaces may be made use of. In certain cases free perspiration is useful. While, however, the altered distribution of the blood which is brought about by the means taken to induce perspiration, such as the Turkish bath, and its determination to the surface of the body, is often of service, the cutaneous excretion is chiefly water, and no great amount of organic matter is carried away, except in kidney disease, when an efflorescence of urea may be found on the surface after a copious perspiration. According to my experience, elimination by the skin is rather an accessory than a primary means of keeping down tension. The kidneys are capable of carrying off a much larger amount of nitrogenised waste than the skin, and diuretics may in this way contribute to the relief of tension. But many diuretic remedies give rise to tension, and apparently produce their effects by raising the blood-pressure. The elimination desired for the purpose we are now considering is best obtained by the diuretics which promote tissue change and oxidation; by copious draughts of pure water night and morning, which will wash out the tissues and carry off any soluble matters; and by potash and lithia, which are solvents of uric acid. It is not altogether a matter of indifference what salts of these alkalies are used; the citrates can be taken in larger doses, and they will render the urine alkaline quite as easily as the carbonates if this is desired; but the carbonates appear to have more metabolic influence, and liquor potassæ has a still greater effect of this kind. The elimination which has the greatest effect on arterial tension is that from the liver and bowels, and of the aperients which are available for the production of purgation the most efficacious for this particular purpose are such as contain mercury. This is a conclusion based entirely on experience and observation. Whether as regards relief of symptoms associated with high tension or as regards the effect on the pulse, a moderate and indeed scarcely recognisable aperient action by a pill containing mercury in some form or other is much more efficacious than free purgation by other means, and pills of this kind can be taken once or twice a week for years in suitable cases with advantage.

The pulse in heart disease has been so thoroughly studied, and is so frequently and fully described, that I shall treat it very briefly, and I only refer to it at all in order to insist on the necessity of taking it into account in both the diagnosis and prognosis of affections of the heart. It is not every systolic murmur at the right second space that indicates obstruction of the aortic orifice, and if we must admit that a systolic apex murmur is proof of some mitral reflux, the murmur tells us absolutely nothing of its amount. The pulse must be brought in to interpret the murmur and fix its significance.—*Lancet*, April 2, 1887, p. 664.

18.—ON PAROXYSMAL CARDIAC DYSPNŒA.

By ALFRED L. LOOMIS, M.D., LL.D., Professor of Pathology and the Practice of Medicine in the University of New York.

In the form of dyspnœa which I now propose to consider, and which I have designated paroxysmal cardiac dyspnœa, the difficulty in breathing is due entirely to the cardiac condition, and the consequent temporary slowing or permanent arrest of the blood current in the heart and pulmonary vessels. In this condition there are no organic or functional changes within the lungs to obstruct the entrance of air to the alveolar surfaces, and the disturbing element in the relations between the blood and air is, therefore, entirely upon the side of the vascular element, which becomes diminished in both quantity and rapidity. The symptomatic results, however, are similar in the two conditions, for the effects are the same, as is readily proved by physiological experiments, whether the air or the blood is prevented from entering the lung. Under whatever diseased conditions this form of dyspnœa may arise, it has this one essential cause, viz., a temporary or permanent arrest of the blood in the heart and pulmonary arteries, a condition which evidently must either be paroxysmal or speedily terminate in death.

When distinct valvular changes are present with consequent hypertrophy and secondary dilatation, a gradually developing chain of symptoms precedes and gives warning of the approach of more serious conditions, and the typical history of the case seldom allows of an error in diagnosis. But when, on the contrary, the entire history is one which does not direct attention to the heart, and the immediate symptoms are cerebral and neurotic, rather than pulmonary or cardiac, and when even a physical examination of the chest shows few, if any, of the familiar or ordinarily recognised signs of organic disease, it is quite possible, and it often happens, that the exact nature of the case is not detected, or the dangers which attend it fully appreciated. It is just because it is so commonly the result of obscure cardiac changes, rather than valvular lesions, that I wish to emphasise its importance, and invite attention to its more careful study.

That the exact condition which I desire to present may be more apparent, I will briefly state the histories of two cases which seem to me, from a clinical aspect, to be typical, although the pathological lesions were essentially different.

[We can reproduce only one of Dr. Loomis's cases.]

Case 1.—Mr. C., aged 54, of sedentary habits, exceedingly temperate, having never been ill a day in his life, came into my house much out of breath, having ridden about a hundred miles in the cars that morning, and having walked quite rapidly from the Forty-second Street Depôt (a distance of about half a mile). While waiting a few minutes in my reception-room his difficulty of breath-

ing increased, and, as he attempted to walk across the hall to my consulting-office, I noticed that he staggered. As I took hold of his arm to steady him, the muscles were quite rigid; he was exceedingly pale, and was apparently unable to speak; as I placed him in a chair, a tremor passed over his body, and he immediately sprang up, braced himself against the corner of the mantel, and gasped out "brandy." When this was furnished he swallowed with difficulty; his head was thrown back, his face became deathly pale, with an appealing expression upon it, the surface of his body was covered with a cold sweat, his pulse was feeble and intermittent, at times imperceptible at the wrist. The efforts to breathe became more and more desperate, and as I steadied him—for he would not allow me to place him in a horizontal position—it seemed as if each breath would be his last. In about twenty minutes the paroxysm gradually passed away. As soon as he was able to talk, he told me that he had had several similar seizures, but none so severe. When he was sufficiently relieved I made a careful examination of his chest. Normal respiration could be heard over the entire chest; both heart sounds were indistinct, and there was an entire absence of normal cardiac rhythm; three or four quick cardiac contractions were followed by a prolonged pause, which was lengthened when he held his breath; no cardiac murmur could be made out.

My diagnosis was degeneration of the ventricular walls, with dilatation of the heart cavities, especially the right.

The patient never entirely recovered from this attack, for after this, slight physical exertion would always bring on more or less severe attacks of dyspnoea; he never, however, had any oedema of the lungs, or of the extremities, and his urine was very albuminous. A month after I first saw him, one morning, about four o'clock, he suddenly awoke in a paroxysm, and died in a few minutes. At the post-mortem examination the walls of the right ventricle were found exceedingly thin, at points almost translucent, readily giving way under pressure. Microscopical sections at different points showed advanced fatty changes in the heart muscles. Both ventricular cavities were dilated, especially the right, and contained large exsanguinated clots, which were so interlaced with the chordæ tendineæ of the tricuspid valves, as to interfere markedly with the blood current. The walls of the left ventricle were pale, but of normal thickness, and showed comparatively little evidence of degeneration; the valves were normal, the lungs were pale and free from disease, the liver and kidneys were engorged, but otherwise healthy.

In studying the pathology of this form of dyspnoea I have found degeneration and thinning of the cardiac walls its most constant lesion; the degenerations in some cases were fatty, in others fibroid; and in one case, which occurred during convalescence from typhoid fever, simple softening. In every instance the degeneration

commenced in the right ventricular walls, or was more advanced there than in the left. Together with the changes in the heart walls in some of my cases, there was atheroma of the aorta and of the aortic valves, accompanied by more or less disease of the coronary arteries. In two instances the coronary arteries were completely obstructed.

In every case of paroxysmal dyspnoea terminating in death, which has come under my observation when I could obtain a post-mortem examination, there was unmistakable evidence of a mechanical arrest of the circulation in the heart, either from failure of its muscular power, or from obstruction to the current of blood through the heart, by fibrinous masses in its cavities. In the majority of instances the arrest is in the right heart, and, as a result, the blood is shut off from the pulmonary artery; the lungs, under such circumstances, will not only be free from congestion, but bloodless, while the other internal organs will be found intensely congested. If the obstruction is in the left heart, the blood current will be arrested in its passage to the aorta, then the lungs will be intensely engorged, and the other internal organs will contain less than their normal amount of blood.

It seems to me reasonable to believe, that the primary or predisposing cause in all cases of paroxysmal cardiac dyspnoea, is a gradual failure in the organic power of the heart, that the exciting cause of the paroxysm is anything which will lead the heart failure to an entire suspension of the cardiac circulation. Thus when any form of degeneration of the cardiac walls exists, mental shock, excessive physical exertion, violent passion, or sudden fear, may act as an excitant of the paroxysm. These excitants may differ widely from each other, for a feeble heart may be stopped as readily by a call for stronger action which it is not prepared to meet, as by suddenly cutting off its blood supply by obstructing its nutritive vessels.

During the relaxation of the physical forces which comes in the early hours of the morning, after profound sleep, when the heart, in the perfectly healthy state, has its minimum propelling power, is the period in the twenty-four hours when one with degenerated heart-walls is most easily affected. Often such persons will awake about four in the morning in the midst of a paroxysm of dyspnoea. In the two instances which I have related, death occurred almost instantaneously about that time of the day.

A distended stomach from flatulency or any other cause, produces little inconvenience in a healthy person beyond a sense of fulness or slight pain, but in one with a degenerated heart, when a distended stomach presses on the diaphragm, the inspiratory movements become impeded, the pulmonary circulation embarrassed, and the enfeebled heart enters on a struggle for which it has no reserve power, and a more or less severe paroxysm of cardiac dyspnoea is the result.

A fully developed paroxysm usually comes on with a sense of constriction across the chest, which is immediately followed by a struggle for breath, accompanied by spasmodic contractions of the respiratory muscles, the surface of the body becomes pale and cold, the countenance extremely anxious, and the patient, if the paroxysm is not too severe, is constantly changing his position, with the hope of obtaining relief. Painful muscular spasms occur in the voluntary muscles in different parts of the body. The mind remains clear. The pulse is feeble, irregular, and intermittent, and frequently there will be a prolonged absence of the radial impulse. This, as well as other forms of cardiac dyspnoea, presents a peculiarity in the relation of pulse and respiration as distinguished from all other forms of difficult breathing, in that the return of the pulse precedes instead of follows the subsidence of the dyspnoea. In some cases the patient will complain of pain at the lower portion of the sternum, which shoots through the chest to the back.

If death takes place during the paroxysm, the final act is one of persistent muscular contraction, the heart failure being followed by a tonic spasm of the muscles of the chest, and a rigidity of all the voluntary muscles.

The symptoms which precede an attack, or what may be called its preliminary symptoms, are few, but they are diagnostic. One of the earliest and most constant, and one which may exist for months and perhaps for years before the occurrence of a well-marked paroxysm, is a sinking or exhausted sensation in the præcordial region; this sensation will come on from very slight causes, such as sudden physical exertion, or strong mental emotions. At first a diffusible stimulant, a few swallows of hot water, or a recumbent posture will relieve it.

In some instances the patient will complain of a choking sensation, commencing in the cardiac region, and passing rapidly to the pharynx, which usually comes on immediately after taking food, or at the moment of falling asleep; it is often very oppressive, and to nervous subjects alarming. So-called dyspeptic symptoms will often accompany it. Sooner or later there will be established an irregularity in the cerebral circulation indicated by attacks of vertigo, headache, hissing sounds in the ear, and occasional dimness of sight. At length attacks of faintness with pallor will occur, and the patient will be troubled with insomnia, his mental faculties will be disturbed, and slight physical exertion, as going up stairs, will cause breathlessness.

In one who presents these symptoms an attack of paroxysmal cardiac dyspnoea is liable to occur at any moment. The physical signs, if the general symptoms are well marked, are usually distinctive; the cardiac impulse is feeble and difficult to locate, there is usually an epigastric tremor, the heart's action is irregular in force and rhythm, although the patient may not be conscious of its irregu-

larity. The first sound of the heart is short and valvular in character, and during periods of great cardiac irregularity it is difficult to distinguish the first from the second sound.

In the majority of cases there are no cardiac murmurs, and no evidence of valvular insufficiency. There will be an entire absence of any pulmonary disease adequate to produce the general symptoms, and an examination of the urine will usually give negative results. These patients will become exceedingly anxious about themselves, and will consult one physician after another, without obtaining anything more than temporary relief.

When a well-defined paroxysm has once occurred, little can be done to avert a fatal issue, but much may be done to delay the occurrence of the first paroxysm, or rather to arrest the degenerative changes in the heart-wall, and prevent the sudden dilatation of its cavities which so often leads to the first paroxysm. This must be accomplished mainly by a restricted diet, and by a carefully regulated life. There is perhaps nothing which so certainly induces the degenerative changes in the cardiac muscles, that allows of sudden dilatation of its cavities, as the daily intemperate use of alcohol; it is evident in such cases that its intemperate use must be stopped, but never suddenly or entirely, for a moderate amount of alcohol is essential to the nutritive processes in a chronic alcoholic subject.

In all cases the diet should be restricted to milk, meat, and a small amount of bread; sugars and starches should be avoided and the quantity of food taken at any one time should be limited. Flannel should be worn next the skin, and the surface of the body should never become chilled. Each day should be divided into eight hours for sleep, eight hours for labour, and eight hours for rest and refreshment, and this division should be strictly adhered to. In other words, the entire life of the individual should be carefully regulated. Next to diet, the most important thing is systematic daily exercise in the open air; the exercise should never be violent or carried to fatigue; commencing in a moderate way, it should be daily increased until the individual is able to take long walks without fatigue, avoiding elevations and going up stairs.

The medical treatment resolves itself into alkalies as eliminatives; the different preparations of iron as tonics, in combination with which small doses of digitalis should be given, 5 or 10 drops of the tincture twice a day. In alcoholic subjects strychnine should be combined with the iron. All of these drugs should be given in such small doses that their use may be continued for a long time.

The first thing in the management of a paroxysm is to give the patient plenty of fresh air, the second is to keep him in a semi-recumbent posture, the third to apply artificial heat to the surface of the body. The only two medicinal agents which I have found

to have any positive control over a paroxysm are the nitrite of amyl and nitro-glycerine. After one paroxysm has occurred nitro-glycerine should be given whenever the premonitory symptoms of an attack are present. During a paroxysm nitrite of amyl carefully administered will give at least temporary relief. I have patients who carry pearls of the nitrite of amyl constantly with them, which they use to ward off impending attacks.—*Medical News*, March 12, 1887, p. 282.

19.—ON FATTY HEART, WEAK HEART, AND ALLIED STATES SUCCESSFULLY TREATED BY A NEW METHOD.

By Prof. ROBERTS BARTHOLOW, M.D., LL.D., Pennsylvania.

[Under the above title Professor Bartholow publishes in the form of a clinical lecture some important observations upon the treatment of what may for convenience be called non-valvular heart disease; conditions due primarily to waning strength of the muscular tissue of the organ. If the physical signs are not distinctive, the rational signs are eminently so. The breath is short, exertion is difficult, and at times there are paroxysms of dyspnoea like asthma. Seizures not to be distinguished from true angina become frequent, the difficulty of breathing becomes permanent, and oedema sets in. The pulse is arhythmical and unequal in force and tension, and the walls of the arteries are rigid, but there is no proper murmur to be heard. As a rule, the individuals thus affected lead sedentary lives, and make use of a faulty diet, consisting in a great excess of the starchy and saccharine food stuffs, leading to a condition in which the heart tissues participate, to a greater or less extent, in the general decline of nutritive activity. In general terms, the method of treatment consists in a regulated diet, systematized exercise, and the use of nitro-glycerine and arsenic. The following is an abstract of Dr. Bartholow's detailed description of the method:]

I mention foremost among the remedies a regulated diet. The principle has consisted in giving the few foods which the patient can digest, and which can best repair damages. The sweets, starches, and fats for the most part, are cut off from the diet, and milk, eggs, fresh meat, game, or poultry, and the succulent vegetables are given. I warn you against large draughts of cold milk. Bulk becomes a cause of offence, and cold affects the heart injuriously through the solar plexus. Only a moderate quantity of hot skimmed milk is admissible, but this is a precious resource. A small amount of fresh meat—beef, mutton, chicken, broiled or roasted, excluding all the parts charred in cooking, should be given once a day, and eggs allowed for breakfast. Bread must be eaten in moderation, and it should be a day old at least. All hot breads, cakes, pastry, crackers, all gravies, sauces, condiments, pickles, fried

articles, dried and preserved fruits, "canned" fruits and vegetables, salted meats, pork, bacon, ham, &c., are strictly prohibited. Such vegetables as lettuce, asparagus, celery, spinach, tomatoes, a single boiled or baked potato, if unexceptionable in quality, are advised. Stewed apple (fresh) without sugar is allowed as a vegetable, or a baked apple at the conclusion of a meal.

Such in general terms is the diet of those who have still fairly good digestion; but in cases of extreme gastric disorder, an absolute milk diet may be required, or such modifications made in the dietary just given as experience may demonstrate to be necessary. The capital point is to allow the patient no aliment that can give rise to indigestion or to fermentation in the least degree.

The next point in the treatment is exercise. The exercise which can be most accurately adjusted to the requirements of the case is walking, and this should be made an habitual duty. Of late, the necessity of exercise in certain forms of heart disease has been brought forward from abroad, as a new addition to the present treatment, and, as usual, we are likely to see exercise in heart disease carried to a ridiculous excess. Walking increases the quantity of oxygen obtained, thus improving the blood by an addition to the amount of an essential constituent, and by burning off unnecessary materials. Exercise favours nutrition by increasing the quantity of blood received by the tissues in a given time, and this result is as true of the heart as of any other part of the body. Also, regulated exercise, by increasing the work of the heart, improves the tone and energy of the muscular elements.

I have now to call your attention to the application of drugs to the treatment of the fatty heart or weak heart—to the use of the medicinal agents, strictly speaking.

We have an admirable proof of the utility of physiological investigations as a means of ascertaining the therapeutic powers of remedies in the applications of *nitro-glycerine* to the treatment of diseases; for its real value as a remedy, and the conditions in which it will prove curative, could not otherwise have been known.

The special reasons for its good effects in weak heart are the following:—It lowers the vascular tension by dilating the arterioles; it increases the rate of the heart's movements; it lessens that irritability of the nervous system which finds expression in spasm, especially of the nervous system of organic life.

It follows from these actions that the quantity of blood sent through the arterial system is much increased, and this increase includes, of course, the arterioles in the cardiac muscular tissue, and, hence, in this way the heart is provided with more abundant materials for its nutrition. A greater activity of movement, sustained in force, contributes to the reparative process. As the treatment, also, removes the disorders of digestion, and furnishes a

more appropriate supply of aliment, the making of good blood is assured, and thus in turn all the tissues of the body gain in nutrition, and the functions are rendered more active in a corresponding degree. Under no plan of treatment have I seen so rapid and thorough improvement in the condition of the weak, the anæmic, and the ill-nourished.

The capital fact which I would have you realise in all its significance is, that by this means the nutrition of the heart is so promoted that morbid conditions of a dangerous kind are prevented, and, indeed, removed. I am firmly convinced that incompetence of the valves caused by yielding of the weakened walls of the heart, may be recovered from entirely under the influence of these remedial measures.

I prescribe the one per cent. solution of nitro-glycerine, beginning with one drop, and adding one drop at each dose until the characteristic effects are produced. The susceptibility to its action varies greatly. The amount required ranges from one to ten drops for the largest number. When the patient feels the least degree of the action the dose is sufficient, and that quantity should be continued, the intervals being from two to six hours, according to the character of the symptoms, and the persistence of the effects. It follows that the preparation of nitro-glycerine used must be such that fine gradations in the quantity administered can be effected. If the dose necessary to produce distinct physiological effects is large at the outset, it often happens that a considerable reduction can be made, and yet the action be maintained. On the other hand, if a small dose suffice at first, after a time it becomes necessary to increase it a little.

I must not fail to mention the other remedy—*arsenic*. I usually prescribe Fowler's solution (two to three drops three times a day); sometimes Pearson's solution of the arseniate of soda (three to six drops three times a day). This remedy plays an important part in several ways:—It removes the morbid state of the gastro-intestinal mucous membrane; it stimulates the appetite, the primary assimilation, and thus powerfully contributes to improve the nutrition of the body; it lessens the irritability, and the abnormal readiness of reflex action of the nervous apparatus, and imparts that influence to the cardiac and respiratory functions, which we call *tonic*. I have said nothing about iron and tonics, and all the armamentarium of supporting treatment. I have advised nothing of these remedies because they are hurtful rather than beneficial. They keep the stomach in a turmoil, interfere with the proper alimentation, and in this way retard if they do not prevent improvement. We must not lose our hold on that elementary fact—that blood is made from food and not from medicine, and that other basic truth, that the construction and repair of the tissues can only be effected by good blood.—*Medical News*, April 23, 1887, p. 451.

20.—ON THORACIC ANEURISM.

By C. W. SUCKLING, M.D.Lond., M.R.C.P., Physician to the Queen's Hospital, Birmingham.

During the past two years I have had under my care, at the Workhouse Infirmary and at the Queen's Hospital, altogether twenty cases of thoracic aneurism. A brief summary of the chief symptoms met with in these cases may be of interest.

Of the twenty cases, three were women, seventeen men; none of the patients were under thirty years of age.

Between 30 and 40 years there were 8 cases

„	40	„	50	„	„	4	„
„	50	„	60	„	„	6	„
	Over 60	„		„	„	2	„

All of them had led very laborious lives; seven of the men had been porters, and had been accustomed to carry heavy weights. A history of syphilis was obtained in four cases only, and dated back several years in each. There was a history of syphilis in one of the women; in the other two, heavy work seemed to have been the cause. In only three cases could a history of sudden onset of symptoms be obtained. In one man, pain in the chest came on immediately after being crushed at a political meeting. In another, pain was felt after lifting a sack of flour. In the third case, pain in the chest supervened immediately after ligature of the external iliac artery for femoral aneurism.

Of all the symptoms, pain was the most constantly present. Pain was complained of in eighteen of the twenty cases. When present, it was always felt behind the upper portion of the sternum, occasionally down both arms, more frequently down the left alone. The pain varied much in intensity, and was always relieved by rest and by iodide of potassium. Dyspnoea was a prominent symptom in eight of the cases, in some occasional, in others constant, but with exacerbations. Stridor on inspiration and expiration was marked in five cases; this is, of course, a symptom that should at once lead to a careful examination of the chest for aneurism, yet it is frequently put down to asthma or bronchitis. Inequality in the radial pulses, dysphagia, hoarseness, brassy cough, and inequality in the pupils were frequently present. Sphygmographic tracings were taken in most of the cases, and one of the few purposes for which the sphygmograph is useful is the localisation of thoracic aneurism. In a case of innominate aneurism, in which dyspnoea was an urgent symptom, there were well marked respiratory undulations in the pulse tracing of the right radial artery.

The destructive pneumonia which follows pressure on the bronchus was observed in six of the twenty cases. This destructive pneumonia may be mistaken for malignant disease of the lung, or for ordinary phthisis.

In one necropsy an aneurism, involving the extra-pericardiac

portion of the ascending aorta, had compressed the right bronchus, and had led to consolidation of the upper lobe of the right lung. During life the patient, a woman, had suffered from hæmoptysis, slight stridor and exhaustion, with marked oedema of the head, neck, and upper extremities. There was dulness over the manubrium, and the usual signs of consolidation of a considerable portion of the right lung. There was no pulsation to be seen or felt, and no pain had ever been experienced; in addition, there was no fever during the time she was under observation. The balance of evidence was thought to be in favour of malignant growth, but at the necropsy an enormous aneurism, with very thick walls, was found. It is well to remember that aneurism is far more common than malignant growth in the mediastinum or of the lung. I have met with two cases of primary sarcoma of the lung during the time in which I have met with twenty cases of thoracic aneurism.

This pneumonia is a very important pressure-symptom; it may affect either the upper or lower lobe of the lung, and helps to localise a thoracic aneurism, as in the following case. A man with an aneurism of the femoral artery was operated on by Mr. Bennett May, the external iliac vessel being tied. He complained immediately after of pain in his chest, and a few months later presented signs of phthisis at the left apex. The consolidation of the left lung advanced; but, unlike what is usually seen in ordinary phthisis, the right lung was healthy, while the left was extensively consolidated. The aneurism was supposed to be situated in the descending portion of the arch of the aorta, and to be growing forwards and compressing the left bronchus, and this was found to be its exact position at the post-mortem examination.

In malignant disease the profound exhaustion which rapidly supervenes is very characteristic; in addition, there is little if any fever, while in the consolidation resulting from pressure on the bronchus an irregular pyrexia is almost invariably present. In one case malignant disease of the upper lobe of the left lung was diagnosed; a day or two later a systolic *bruit* was heard in the interscapular region close to the spine. This threw a little doubt upon the diagnosis. Was the *bruit* due to pressure on the aorta by the growth; or was there an aneurism compressing the left bronchus and leading to a consolidation of the left upper lobe? The absence of fever and the very marked exhaustion supported the diagnosis of malignant growth which was found to be present at the post-mortem examination. In four cases aortic regurgitation was present in addition to the aneurism, probably being brought about by the same cause. In one case a double *bruit* was present at the base of the heart, with capillary pulsation; but it was found after death that the aortic valves were perfectly competent, so that a diseased aorta alone can produce these conditions. In this case,

also, the heart was not enlarged, only being displaced; it seems that aneurism, unless complicated with insufficiency of the aortic valves, does not lead to cardiac hypertrophy. A systolic *bruit* was heard in thirteen of the cases, in three no murmur at all. In two cases embolic phenomena were present, in both a left hemiplegia. In one case there was, in addition, embolism of the central artery of the retina on the same side, leaving well marked atrophy of the disc. Nineteen of the twenty cases were aneurisms of the arch of the aorta outside the pericardium; one was innominate.

I have met with one case of acute aneurismal dilatation of the intra-pericardial portion of the aorta causing death by perforation and hemorrhage into the pericardium. This was in a case of ulcerative endocarditis. The aneurism was not diagnosed during life. In five cases the diagnosis could be made by inspection and palpation of the chest wall, there being evident bulging and pulsation; in fifteen there was neither of these symptoms. In nineteen of the twenty cases there was dulness on percussion over the manubrium or at the side of this portion of the sternum, attention being directed to this region by the patients' complaint of pain there. This region of the chest is often overlooked. It is a good rule to percuss the sternum in every case of chest-pain in men.

There is no such thing as mediastinal dulness in the healthy state, the note of the sternum in health being resonant, although there is no lung behind the first portion of it. Dulness over the manubrium sterni is pathological, and means in the majority of cases mediastinal tumour, aneurism being by far the commonest form. Tufnell's plan of treatment, together with the administration of iodide of potassium, gave great relief in twelve cases. In two cases under this treatment the dulness almost disappeared, the pressure symptoms completely so, and the diagnosis of aneurism could not have been made without a knowledge of the previous condition. The iodide was given in large doses, commencing with ten grains, and increasing to a dose of a drachm or more, according to the tolerance and effects. In two or three cases the iodide seemed to do harm, the pulse becoming very quick. Aconite in these cases suited better. Electrolysis was performed in one case with temporary relief. — *British Medical Journal*, April 30, p. 929.

DISEASES OF THE ORGANS OF RESPIRATION.

21.--ON THE CAUSES AND MECHANISM OF ASTHMA.

By WILLIAM C. GLASGOW, M.D., Adjunct Professor of Medicine in the St. Louis Medical College, U.S.A.

[Dr. Glasgow first indicates the evidence upon which the reflex theory of asthma rests, points out the various apparent paths of its mechanism, and states that this form of asthma is the most

common one of the pure type of paroxysmal dyspnœa. Amongst the direct causes set down, may be mentioned nasal polypi, retained secretions, dust, intense light, or anything capable of producing an impression upon the sensitive nasal, laryngeal, or pharyngeal mucous membranes. If the asthmatic be closely studied during the paroxysm we shall find a positive and characteristic connection existing between the severity of the attack and certain physical signs in the lungs. We can clearly divide the paroxysms into three stages, each stage characterised by positive physical signs, and with each stage a certain increasing degree of the severity of the symptoms noted.]

The first stage may be called the state of *Inspiratory Dyspnœa*. On examination we find the percussion sound unaltered; on auscultation the *inspiratory sound of the vesicular murmur is replaced by a high-pitched, prolonged blowing sound*. The expiratory sound may be absent or unchanged. This blowing inspiration is evidently a *blowing râle*, and it is caused by cylindrical narrowing of the lumen of the bronchi, not sufficient to cause the sibilant or whistling râles. It is a pathognomonic of the first stage of uncomplicated asthma, and differs from the rough inspiratory murmur of bronchitis or the intensified inspiration of the exaggerated respiration such as is heard in compensatory breathing or in the nervous dyspnœa of hysteria or blood poisoning.

The symptoms of the first stage are often slight; at times wanting. In some a slight tightness of the chest is experienced; in others a slight dyspnœa is felt on exertion; a paroxysmal cough most marked in the early morning hours is sometimes the only symptom.

The second stage may be called the stage of *Expiratory Dyspnœa*. It presents the physical signs usually recognised as characteristic of the asthmatic paroxysm. Percussion gives an increased resonance. On auscultation, a prolonged expiration is heard. Both expiration and inspiration may be covered by the sibilant and sonorous râles. In certain cases small moist râles of a liquid character are heard over limited portions of the chest. The symptoms of the second stage are those usually associated with the asthmatic paroxysms; the sense of oppression, the dyspnœa, and the slow, laboured breathing are marked. The thorax heaves with each inspiration and the accessory muscles of respiration are brought into action, the patient is unable to lie down, but sits or moves in a fixed position, with raised shoulders and head projected forward. The face is livid and the alæ nasi dilated.

The third stage may be called the *Stage of Orthopnœa*. Percussion gives a deep, drum-like resonance, showing the extreme distension of the vesicles. *On auscultation a short inspiratory whiff is heard, and the expiratory sound is inaudible*. The inspiratory whiff is most apparent over the larger bronchi. The

symptoms of the third stage of asthma present a picture of the most supreme distress and agony. The patient stands with the hands resting on some fixed point of support, and the entire energy of the body is given up to the struggle for air. The true respiratory muscles seem to be completely inactive, and breathing is carried on entirely by the accessory muscles of respiration. The thorax is fully distended with little perceptible movement; the face becomes dusky, covered with perspiration—in strong contrast with the cold extremities; a sense of constriction is experienced around the body over the diaphragm.

These different stages of asthma occur in the same individual at different times, although a certain similarity of type is apt to occur in different individuals. That they are simply stages of the same process, and that the varying physical sounds are all due to narrowing of the bronchi, are fully proven by the effects of therapeutic efforts. For example, the inhalation of nitrite of amyl, or an application of carbolate of iodine to the larynx, will often instantly change the inspiratory whiff of the third stage to the prolonged expiration with the sibilant and sonorous râles of the second. This change is at once realized by the patient in a loosening of the constriction of the chest, and greater comfort and freedom of breathing. We can also, through the same means, produce a change from the whistling râles of the laboured expiration of the second stage to the blowing râles of the first. When the asthmatic is subjected to some additional source of irritation, we find the increased distress of the patient explained by the change from the first to the second stage, or the second to the third. Although the asthmatic paroxysm is essentially due to a bronchial obstruction, we find it quite frequently interchangeable, and at times complicated with spasm of the glottis and spasm of the diaphragm.

The mechanism by which the asthmatic paroxysm is caused, has always been the subject of dispute and controversy. That the theory of spasm of the bronchial muscles is the prevailing one must be admitted, but it stands more in the light of medical tradition than proven fact. That spasm of the glottis and spasm of the diaphragm occur in the asthmatic cannot be denied by any one who has made a study of the disorder; the symptoms of those conditions are so marked, and their occurrence so frequent, that they cannot be overlooked; but that they are part of the essential nature of asthma is not true, as we find many cases of asthma in which they are wanting. Spasm of the diaphragm can never produce the mechanical râles always found in asthma, although in certain cases it may play an important part in producing the great distension of lung vesicles seen in the later stage of the disease. The theory of Weber, that the paroxysm is due to vasomotor turgescence or dilatation of the mucous membrane of the bronchi, finds complete

support in the clinical picture of asthma: the transient and rapid variations of the physical sounds, the presence of the dry and moist râles, and the acute distension of the lungs seen in pronounced attacks of the disease. This theory, however, is directly contradictory to the acknowledged physiological effect of the drugs which are generally recognised as most useful in allaying the paroxysm; the nitrites, chloral, and morphia are all known as relaxants and anti-spasmodics, and their use could only increase the distress if the dyspnoea was due to a vasomotor dilatation of the vessels of the bronchial mucous membrane. In a paper read before the American Laryngological Society, at Detroit, in 1885, I described a condition of the nasal mucous membrane seen in certain patients. This condition is characterised by pallor, swelling, and an œdematous condition of the membrane. When irritated as by the touch of a probe or any other irritant, the swelling is increased and a profuse, thin or watery secretion is poured out. This condition promptly subsides after the inhalation of nitrite of amyl, ether, or the instillation of atropine or morphia; but remains unchanged on the application of cocaine. These cases occurred in persons of marked nervo-vascular temperament, and in whom functional nerve disturbances were common. The existence of pallor, more or less marked, and a marked œdematous condition of the mucous membrane, distinguish this condition from that ordinarily seen in vasomotor catarrh. In the latter condition there is hyperæmia with dilatation of the vessels; but in the former the pallor completely negatives the idea of a dilated condition of the vessels, and the opposite condition must exist. The action of the drugs indicated in these cases rather a spasm of the arterioles, and I have chosen to consider the disturbance of the nasal membrane to be due to a vasomotor spasm of the arterioles of the membrane. A study of these cases led me to surmise that possibly an analogous condition may exist in the mucous membrane of the bronchi during asthmatic attacks. I examined a large number of asthmatics during the paroxysm with the laryngoscope mirror, and found that during the paroxysms the mucous membrane of the pharynx, including the uvula, presented a similar pallid, œdematous appearance; that the membranes of the larynx and trachea appeared paler and more swollen than normal, but not so œdematous as that of the pharynx. When portions of the membrane were inflamed, as is common in asthma, the inflamed area presented more the pale red of an intensely anæmic or phthisical subject than the rosy red of ordinary hyperæmia or inflammation. This is in direct contradiction to the observation of Störck, who claims to have found the larynx and trachea congested during the attack. If these conditions can be seen to exist during the asthmatic paroxysms in the upper air-passages as far as inspection is possible, I think we are fully justifiable in reasoning that an analogous condition exists in

the bronchi. The normal functional differences between the mucous membrane of the bronchi and that of the upper air-passages would somewhat change the picture, more especially as the excessive glandular secretions would be greatly diminished in quantity, or even wanting.

I would, then, consider asthma to be a disorder of vascular irritability; that the paroxysm is directly due to a partial occlusion or cylindrical narrowing of the lumen of the bronchi through the swelling of the bronchial mucous membrane; that this swelling is caused by a vasomotor spasm of the arterioles with a saturation of the tissues by the liquor sanguinis; this condition is accompanied by a general high blood pressure.

With this theory we find a complete explanation of all the physical signs of asthma. We see the possibility of the rapid changes of physical signs observed during the paroxysms, and we have in its support the physiological action of all the drugs which experience proves to be of value in allaying the paroxysm—the nitrite of amyl, morphia, chloral, lobelia, and iodide of potash in their action allay the spasm at the same time that they tend to reduce general blood pressure; whilst drugs like the bromides prove of little value in breaking the paroxysms when once in force, although they are serviceable in preventing a recurrence.—*International Journal of Medical Science*, July 1887, p. 112.

22.—ON A SPEEDY AND SOMETIMES SUCCESSFUL METHOD OF TREATING HAY FEVER.

By Sir ANDREW CLARK, Bart., M.D., F.R.S., Emeritus Professor of Clinical Medicine to the London Hospital.

[Sir Andrew Clark first discusses in a brief manner the general, local and external conditions concerned in the production of “periodic specific coryza,” and himself adopts the view that, in the evolution of almost every attack of the malady, the three factors already mentioned are at work—the nervous constitution, the local irritability, and the external exciting cause. With respect to treatment, Sir Andrew says:]

By common confession, general treatment, although not useful, is never by itself successful. We are therefore compelled to turn to the study of local treatment as the chief mode of relieving or curing the disease. There are three plans of local treatment. The first plan is to allay the irritability of the nasal mucous membranes. The second plan is to exhaust the irritability of the nasal mucous membrane. The third plan is to remove or to modify, or to destroy by caustic, or by cautery, galvanic or igneous, such portions of the nasal mucous membrane as are found, or believed to be, the seat of the pathogenic irritability. This third and most radical plan of treatment is practised for the most part in America, and in the

hands of Daly of Pittsburg, Roe of Rochester, and Mackenzie of Baltimore, it has been followed by lasting and signal success. But as there are not as yet at our disposal materials sufficient to form a critical estimate of the relative value of this form of treatment, as I have myself no personal experience of the practice of it, and as in this imperfect lecture my chief object is to submit to your consideration the plan of treatment designed and practised by myself, I dismiss for the present from further consideration all operative procedures of this radical kind.

The first plan of treatment proposes to prevent or to cure hay fever by allaying the pathogenic irritability of the mucous membrane. This was the object which I endeavoured to achieve when I began my therapeutical experiments in the treatment of this disease. From trials extending over several years no remedies of this sort except aconitina and atropina returned me any results of the smallest value, and the result returned by the use of these alkaloids was so insignificant, and the effects of following it were sometimes so disagreeable, that I abandoned my inquiries in this direction. The introduction of cocaine, however, and its recent employment in the treatment of hay fever, induced me to re-open my experiments in this direction. At first my success was considerable, for three out of five cases were immediately relieved, and the relief was maintained by the frequent renewal of the application of cocaine to the nasal mucous membrane. But when last year my experience of the use of this drug somewhat increased, my success in using it diminished. In one case the application failed and disagreed. In another case it neither disagreed nor failed, but I was quite unable to discover in the patients the grounds of this difference of action. Nevertheless, although it appears to me that the success of cocaine as a local remedy in hay fever has been overrated, although the necessity of frequent application is troublesome, and although its use is not free from inconveniences which might eventually prove something worse, I am of opinion that its success and its comparative freedom from injurious consequences are sufficient to justify with careful watching a longer and larger trial. There are three ways of using cocaine in the local treatment of hay fever; it may be used in the form of a solution, of a spray, or of a nasal bougie. Personally, I prefer to use a solution varying in strength from 5 to 15 per cent., and I apply it to the interior of the nose and the back of the soft palate by means of a large camel-hair pencil attached to an aluminium shank and bent at an appropriate angle. For use in the form of nasal bougies, from a quarter of a grain or more of the hydrochlorate of cocaine is dissolved in a mixture of gelatine and glycerine, and made of different weights and shapes according to the peculiarities of the case on which they are to be employed. For using cocaine in the form of spray, some efficient and ingenious spray-producers have been invented. Many of them

are furnished with nozzles, so constructed that the spray can be applied directly to almost any part of the nasal and pharyngeal cavities. These spray producers, with weak cocaine solutions, are sometimes very useful in allaying the small but still troublesome irritation which, in the intervals of the hay fever paroxysms, are apt to arise in the eyes and mouth. By the great kindness of Mr. Martindale, to whose pains, intelligence, and accuracy in matters of this kind we are all so much indebted, I am enabled to show all these preparations of cocaine and all the instruments wherewith they are used.

I come now to consider the second plan proposed for the local treatment of hay fever. The object of this plan, which does not exclude constitutional treatment, is to subdue the irritability of the nasal mucous membrane to such an extent that it shall no longer react to special or common irritants, whether pollen or dust, in a pathogenic manner. In the first place the patient is put upon such a regimen as will conduce most to the improvement of his general health. He is instructed to have a simple but liberal dietary, to be extremely moderate in the use of alcoholic stimulants, to have daily exercise, to follow early hours, and to continue, if that be possible, even at the cost of suffering, in his ordinary occupations. If the patient is very weak, he is instructed to take with meals drachm doses of Easton's syrup with three or more drops of the solution of arsenic hydrochloric. If he is nervous as well as weak I prescribe for him in their full respective doses tartarized iron, ammonium bromide, tincture of nux vomica, and a solution of arseniate of soda. In some cases I think that I have seen great benefit follow the use, thrice a day, of 5 grains of sulphate of quinine, dissolved in citric acid and given in effervescence with carbonate of ammonia. For the strictly local treatment there are required a common laryngeal brush and a carbolic mixture. This mixture is composed of glycerine of carbolic acid 1 ounce, hydrochlorate of quinine 1 drachm, and a thousandth part of perchloride of mercury. Heat will be required in order to dissolve the whole of the quinine, for without heat Mr. Martindale informs me that the glycerine of carbolic acid will dissolve only half the quantity prescribed.

Let me now describe the method of procedure to be followed in applying the carbolic acid mixture to the mucous membrane of the nasal cavities. If there is much mucus in the nostrils, cleanse them by means of a douche of warm water containing boroglyceride, in the proportion of an ounce to the pint. Dip the laryngeal brush in the carbolic acid mixture, and see that the brush is full but not overflowing. Place the left hand on the left side of the forehead, and the thumb on the tip of the nose, with the shank of the brush between the thumb and two forefingers of the right hand, and the brush itself directed upwards, push it gently but firmly into one of

the nostrils, carry it as high as you can without inflicting injury, move it about so as to bring the mixture in contact with as much as possible of the interior of the upper part of the nostril, and then withdraw it. With another brush filled with the carbolic acid mixture, or with the same brush washed, dried, and replenished, you complete in the manner following the two operations required for each nostril. Having the left hand in the position already described, and the right hand holding the laryngeal brush, with the hair pencil directed forward from the body of the operator, push the brush along the floor of the nostril into the pharynx, and after insuring free contact with the adjacent parts, withdraw it. If during the operation the brush is over-full, some of the carbolic mixture will fall into the throat and excite coughing or some other discomfort. When you have thus finished the treatment of one nostril, and carefully removed any of the carbolic acid mixture which may have been spilt upon the nose or lips, you will proceed to treat the second nostril in exactly the same manner as you have dealt with the first. During the performance of these manœuvres great assistance will be obtained from the left hand of the operator being placed over the left side of the forehead and face of the patient. With this hand the operator can adjust the patient's head to the various movements of the laryngeal brush, and with the same hand placed on the tip of the patient's nose the opening of the patient's nostril can be adjusted to a convenient size and shape. When the local effects of a paroxysm are severe, and have extended to the back part of the soft palate, it will be desirable to introduce through the mouth into the pharynx the laryngeal brush moderately filled with the carbolic acid mixture, and there, by a manœuvre easily acquired and practised, to brush the posterior surface of the soft palate and the adjacent parts. The immediate effects of these manœuvres differ in different persons, and in the same person at different times. In all cases the effects are more or less disagreeable, and last from half an hour to half a day. Sometimes a little blood-stained mucus is discharged from the nose and throat; sometimes there is a slight frontal headache; sometimes there is a trivial cough, and occasionally you will have developed all the local phenomena of a paroxysm of hay fever.

When advising a patient with hay fever to submit to this plan of treatment for its relief, I have found it expedient to warn him beforehand of the disagreeable effects which sometimes follow the application of the carbolic mixture, and to assure him that they are both brief in duration and devoid of danger. When this warning is withheld, some patients will grossly exaggerate their sufferings, ascribe all sorts of injurious consequences to the application, and cover the physician with undeserved reproaches. Sometimes a single application of the carbolic acid mixture is sufficient to prevent for a whole season the return of the hay fever paroxysm,

and four times within my own knowledge it has never reappeared. Usually two or three applications are necessary to ensure a full chance of success. The length of the interval between the applications must be determined by the character of the immediate effects. If these are mild, the application may be renewed on alternate days; but if severe, at least three days should elapse between succeeding applications.

Of the measure of success which has followed this treatment of hay fever, now practised over twenty years, I am unable to speak with exactitude. Patients when relieved seldom, and when unrelieved never, return to record their experience, and I have been unable to get at the subsequent histories of more than a third of the number of persons whom I have treated. It is, however, my conviction that of this roughly estimated third whose cases I have been able to follow, a half has been cured for the season, and four persons have been cured "for good." This, you will say justly, is not a success of which to boast. Quite so. But if you will compare the results of this treatment with the results of every other treatment, not excepting the cocaine treatment, which is its closest rival, you will have to confess that, however small the measure of success, it is not one which you can afford to despise. At any rate, a communication of this kind is entitled to your indulgence, inasmuch as it is an honest, although a very humble, endeavour to press pathology into practice, and to take away the reproach which has been cast upon us of ignoring or of repudiating the natural and just alliance which should unite in closest relationships the science with the art of medicine.—*The Cavendish Lecture, Lancet, June 11, 1887, p. 1170.*

23.—ON THE USE OF THE NITRITES IN THE PAROXYSMAL DYSPNŒA OF ASTHMA AND BRONCHITIS.

By THOMAS R. FRASER, M.D., F.R.S., Prof. of Materia Medica and of Clinical Medicine in the University of Edinburgh.

[The following excerpt forms the concluding portion of a clinical lecture, in the early part of which the different forms of paroxysmal dyspnœa are briefly alluded to. The clinical manifestations of spasmodic asthma are next described, and the various theories at one time or another held to explain them are shortly reviewed. Coming to the more immediate object of his observations, Dr. Fraser says:]

Although the effects of pharmacological agents upon the functions of the muscle and nerves of bloodvessels have been elaborately studied, their effects upon the functions of these structures in the bronchi have been but little investigated. Among the most striking of the results that have been obtained by pharmacology in the study of the influence of agents upon the blood vessels,

is the demonstration that various nitrites cause a dilatation of the bloodvessels by an action restricted to the bloodvessels themselves. It was suggested to me by this fact that light might be thrown upon the production of dyspnœa in asthma and bronchitis by examining how far the dyspnœa and some of its associated phenomena could be modified by the action of nitrites. It seemed to be of importance to include in this observation not only the influence upon the dyspnœa (for any influence on it alone might be explained by an action upon nerve structures remote from the bronchi themselves), but also the influence upon the associated phenomena which have their seat of origin, without doubt or ambiguity, in the bronchi themselves. The associated phenomena, to which I attach the greatest importance, are the dry râles, audible in these diseases when the chest is auscultated, and conspicuously present along with the dyspnœa.

The first observation I made with these objects in view was in 1880, on a patient twenty-two years of age, of markedly nervous diathesis, who had suffered from asthma for several weeks. The chest was auscultated during an asthmatic paroxysm of moderate severity, and it was found that cooing, whistling, and creaking râles were abundantly present. She inhaled during fifty seconds a few minims of nitrite of amyl. Two minutes after the inhalation had been commenced, the râles had entirely disappeared and her breathing had become quite easy. In another minute the râles had returned, and the breathing had become more difficult. After an interval of six minutes, when both the râles and dyspnœa were present in their original abundance and severity, she again inhaled nitrite of amyl, this time for thirty seconds, and in forty-five seconds after commencing the inhalation the râles had entirely disappeared, and the breathing was perfectly unembarrassed. In five minutes afterwards, the original state of breathlessness, with its accompanying auscultatory phenomena, had returned. After an interval of ten minutes, nitrite of amyl was a third time inhaled, with essentially the same results as on the previous two occasions.

This observation showed in a very striking manner that nitrite of amyl very rapidly caused every sensation of dyspnœa to disappear. The coincident effects of the highest interest were that so long as the dyspnœa was removed, and only so long, were the cooing, whistling, and creaking sounds silenced, and so long also were there present those well-known modifications in the pulse characteristics which indicate dilatation of blood vessels. Since this observation was made I have accumulated much evidence of a similar kind. In a few other cases nitrite of ethyl as well as nitrite of amyl were given by inhalation, but in the greatest number of the observations the administration was effected by the introduction of the nitrite into the stomach, and thus a much more prolonged action was obtained. In this manner, not only has the

influence of nitrite of amyl and of ethyl been examined, but also that of nitrite of sodium and of the nitrite-acting substance, nitro-glycerine. Further, in several cases of severe asthmatic orthopnoea occurring during the night, remarkable alleviation, with coincident silencing of the râles previously abundant in the chest, were obtained in several observations made for me by Dr. Vaughan and Mr. Toft on patients in the wards.

In bronchitis accompanied with dyspnoea similar effects were also obtained. The dyspnoea was removed, and at the same time the previously existing dry râles disappeared. Let me illustrate this action of nitrites in two patients suffering from bronchitis, now placed before you. One of the patients has been in the wards for several weeks, and from previous experience I can confidently predict the changes that will occur. He has suffered at intervals during the last fifteen years from bronchitis, the lungs are emphysematous, and his chief complaints at present are breathlessness and cough with a rather adhesive and slightly frothy sputum of small quantity. The other patient was admitted into the hospital only yesterday, but I shall be much disappointed if the observation I shall immediately invite you to make on her should fail as an illustration. Her cough originated four months ago from a severe wetting. You observe that she has very obvious dyspnoea, and the sputum which I show you is large in amount, watery, and contains much froth. Both patients are suffering at the present moment from dyspnoea, and, as you have heard from the four members of the class who are examining the patients, two of whom are continuously auscultating the chest of each patient, there are now associated with the dyspnoea an abundance of snoring, whistling, and cooing râles. I now ask Dr. Jeffcoat, the resident physician, to give to one patient four minims of nitrite of amyl in a little water, and to the other two minims of a 1 per-cent. solution of nitro-glycerine also mixed with a little water; and the gentlemen who are auscultating will at once inform us of any change in the sounds which they hear, while I have asked the patients to announce the first change which they experience in their sensations. It is only a very few minutes since the medicines have been given, and already you have heard, almost simultaneously, that silence prevails in the chests where before there was a continuous succession of sounds, and that both patients find that they no longer experience any dyspnoea.

The significance of the facts I have now brought before you in connection with the influence of nitrites upon the dyspnoea of asthma and bronchitis, some of which you have yourselves assisted in observing, is almost self-apparent. They appear to throw light upon the production of the dyspnoea of asthma, and in doing so to confirm the conclusion otherwise arrived at by Biermer, that the dyspnoea cannot find its chief explanation in spasm of the dia-

phragm. They appear also to show that this dyspnœa does not depend on suddenly produced and vanishing constrictions of the bronchial tubes, caused by swellings of a hyperæmic, herpetic, or urticaria-like character; for the means that have been successfully employed to control and terminate the dyspnœa are the very means which should, according to the theory which involves constrictions of this kind, be the most efficient for increasing and prolonging it. Relief of the dyspnœa and removal of the accompanying râles were simultaneously or nearly simultaneously produced by nitrites, whose action is to increase hyperæmia by dilating blood vessels. As nitrites, however, lessen the contraction of non-striped muscle, it appears to follow that the râles which accompany the dyspnœa of asthma are produced by spasmodic contractions of the bronchial muscles, that the dyspnœa is mainly the result of spasmodic constrictions of the bronchial tubes, and that therefore the old doctrine which attributes the asthmatic paroxysm to spasm of the bronchi is in all probability the correct doctrine. In reference to their bearing upon the dyspnœa of bronchitis, we have these facts to assist us: that whenever rhonchi and sibilations accompanying dyspnœa were removed by nitrites, the dyspnœa was also removed or lessened; but when the rhonchi or sibilations were unaffected the dyspnœa was not appreciably lessened. It could not be expected that in all cases of bronchitis the administration of nitrites would be followed by complete relief of the dyspnœa and complete removal of the auscultatory phenomena. In this disease dyspnœa is sometimes produced by mucus or other inflammatory products accumulated in the bronchial tubes, and rhonchi are sometimes heard which are caused by a viscous condition of these accumulated products, and even by accumulations of a similar kind in the throat. In such cases nitrites fail to give complete relief, and they fail to silence the abnormal sounds. That they should fail is a confirmation rather than a refutation of the opinion which I wish emphatically to state—that stenosis of the bronchi due to spasmodic contraction of the bronchial muscle is a frequent cause of the dyspnœa of ordinary bronchitis.

I have not obtained any facts that would justify the preference of any one of the nitrites because it possesses therapeutic advantages over the others in the treatment of asthma or bronchitis. There are, however, conveniences of administration which lead me to give a preference to nitrite of sodium and to nitro-glycerine. They are both extremely stable, and they can readily be given in solution, either by the stomach or by subcutaneous injection. These advantages are not possessed by nitrite of amyl and nitrite of ethyl, and even the latter substance in the alcoholic solution of the *spiritus ætheris nitrosi* of the Pharmacopœia is notoriously a very uncertain preparation. It is probable that the favour with which this preparation is, notwithstanding, regarded, is due not only to the action

on the circulation which it shares with the other nitrites, but also to its previously unrecognised influence on dyspnœa, which is no doubt exerted when it is administered, as it so frequently is, in the treatment of bronchial catarrh. When the volatile nitrites are given by inhalation, the effects are only of brief duration, but when they are given by the stomach the effects are similar in their relatively prolonged duration to those of the non-volatile nitrites. Nitrite of amyl, nitrite of ethyl, nitrite of sodium, and nitroglycerine have each proved successful in my observations in relieving the dyspnœa of asthma and bronchitis. I believe they do so by removing bronchial spasm, and the remarkable power which they possess in doing this will probably lead to their being more largely used than they hitherto have been in the treatment of disease. Where their administration is successful in removing the auscultatory evidences of such spasm, it is difficult to imagine anything more convincing of the beneficial influence that can be exerted upon the conditions of disease by pharmacological agents. The observer has presented to him a patient in whose thorax a continuous succession of varying sounds is heard. Within a few minutes after a nitrite has been administered, the endless succession of noisy breath accompaniments gives place to an almost complete silence, in which only the subdued quiet of normal respiration is heard, and at the same time, what to us is of even greater interest and importance, the distress of dyspnœa, or, it may be, the intense suffering and anxiety of orthopnœa, is entirely removed.—*Lancet*, July 9, 1887, p. 52.

24.—ON THE TREATMENT OF LARYNGISMUS AND ALLIED CONVULSIVE CONDITIONS IN INFANCY.

By W. H. BARLOW, M.D., Consulting Physician to the Pendlebury Hospital for Children, Manchester.

The intimate connection which exists between convulsions of the character which we have been considering, and that dyscratic condition which we call rickets, is the most prominent of the facts which we have hitherto considered. The researches of Kussmaul and Tenner, and the admirable Croonian Lectures of the late Dr. Moxon in 1881, have cleared away the ancient theories of hyperæmia and congestion, and led us to see the true excitant of convulsions, apart from mechanical irritation, in a condition of anæmia, or “kakotrophy.” Thus, leaving aside tumours or inflammatory conditions, convulsions follow loss of blood, severe and long-continued drains, such as diarrhœa, superlactation, &c., blood-poisoning, as by uræmia, or the poisons of the exanthematous fevers, &c., when the skin-eruption is suppressed and the like: and, lastly, but most important for our present purpose, when the blood becomes venous from retention of those matters

which should be passed off by respiration. It may be objected to this view that asphyxia produces relaxation of muscle, and renders motor centres unexcitable; but it is the case with many other poisons that a large dose paralyses the functions which a smaller one excites and stimulates. A continuous or frequently recurring condition of venosity in the blood circulating through the brain leads to an instability of some of the centres of the lower level, about the floor of the fourth ventricle, and the discharge of even a small portion of these determines, by contiguity, the discharge of others, and finally involves the spinal and general centres. If this be so, then we are led to ask what led to this venous condition of the blood? In laryngismus we have the coincidence of two causes—the malnutrition, evidenced by the rickety condition so frequently present, and the softness of the bones forming the chest-walls, which prevents a full and free expansion of the lungs; and, the predisposition being thus established, a very slight interference, as by flatus, or some other slight cause, is sufficient to determine the discharge. In whooping-cough and in spasmodic asthma a somewhat similar condition arises, in the former case, due probably to a specific irritation of the entrance to the larynx; while in depressing emotion and the acute affections of the respiratory organs, we have the same results.

The first indication of treatment is, then, self-evident: it is to provide that there shall be no artificial obstruction to free respiration, that the dress shall not compress the throat, or impede the movements of chest or abdomen. That the air shall be pure and warm, so as not to excite reflex spasm by its contact with the tracheal or laryngeal surface. Cold water dashed suddenly over the head and chest will often put a stop to a paroxysm, or a cloth or sponge wrung out of hot water, and applied suddenly to the throat, or, if suffocation seem imminent, the finger introduced into the pharynx, may induce vomiting and relief. The warm bath is a popular and useful mode of treatment, and the vapour seems to have a soothing effect. If the case be severe and prolonged, the administration of chloroform may be useful, but it is to be borne in mind that this will cause some obstruction to the already over-burdened respiration. A preferable mode, if time permit, will be the administration of a starch enema containing from one to three grains of chloral-hydrate, for a child of one year. If there be any evident cause of reflex irritation, such as tense and swollen gums, they may be scarified with the lancet; for the relief which undoubtedly often follows is probably more from the effect of the slight bleeding than from any other cause. *Ascarides* or *lumbricoides* may be removed by the appropriate means; for the former I prefer rather copious enemata of quassia; followed by *lavements* of warm water, or, if there be straining, by a starch enema, to which may be added bromide of potassium, one

to four grains, according to age. If there is reason to suspect the presence of undigested or indigestible food in the stomach, a stimulant emetic of mustard or ipecacuanha, or zinci sulph., may be given. If there be great turgescence and lividity of the face during the fit, and persisting during the intervals, the application of one or two leeches to the nostrils or temples is a practice which has been often beneficial, and which I should not allow any consideration of modern prejudice to induce me to omit, where the case seemed to me to require it. Such a practice, in the case mentioned, is consonant to reason and to pathological physiology; it relieves the turgid and overfilled vessels of the surface, and it reduces in some degree the amount of toxic matter in circulation, both of which are indications that must be advantageous to the patient. But though I say this, it must not be thought that I advocate depletion in these cases; they are, as I have said before, essentially the result of anæmia or malnutrition, and require nutriment and support. The usual measures of hygiene must be thoroughly carried out, and the diet suited to the age of the child; if it is of an age to take other than milk, the juice of meat, or raw flesh itself chopped, and mixed with a small quantity of salt, is often taken well, and of much value, in rickety cases, a tea-spoonful being given twice or thrice a day in addition to other food. Lime-water in milk is useful sometimes, but cod-liver oil in doses not too large (the motions being watched and the dose reduced if the oil appears on the surface) has seemed to me of greater value. The clothing must be warm; flannel should be worn next the skin, and changed and aired night and morning; cold or tepid sponging should be employed; and, when the weather is suitable, frequent carriage in the open air, care being taken to avoid cold winds or any undue exposure. If the bowels are constipated, decoction of aloes, or aloin in suitable doses, will be found useful, and small doses of extract of belladonna (one twenty-fourth or one thirty-second of a grain), twice or three times a day, assisted by friction of the abdomen with castor-oil, are often effectual, even in obstinate constipation. The bromides of potassium or ammonium are very useful in these cases, the latter seeming to me to be preferable. They may be given alone or in combination with chloral-hydrate, and are well borne by children; one grain of the latter to three or four of the bromide may be given to a child of 12 months, every three or four hours, but they may be pushed, if required, much further. Occasionally the administration of a few grains of grey powder is useful, and, during convalescence, the ferruginous tonics. Musk is also very useful in these cases, in doses of one-third of a grain to one grain for a child of 12 months, and belladonna, previously mentioned for its use in constipation, is valuable as a respiratory stimulant, and is well borne. as much as fifteen minims of the tincture having been given three times a day

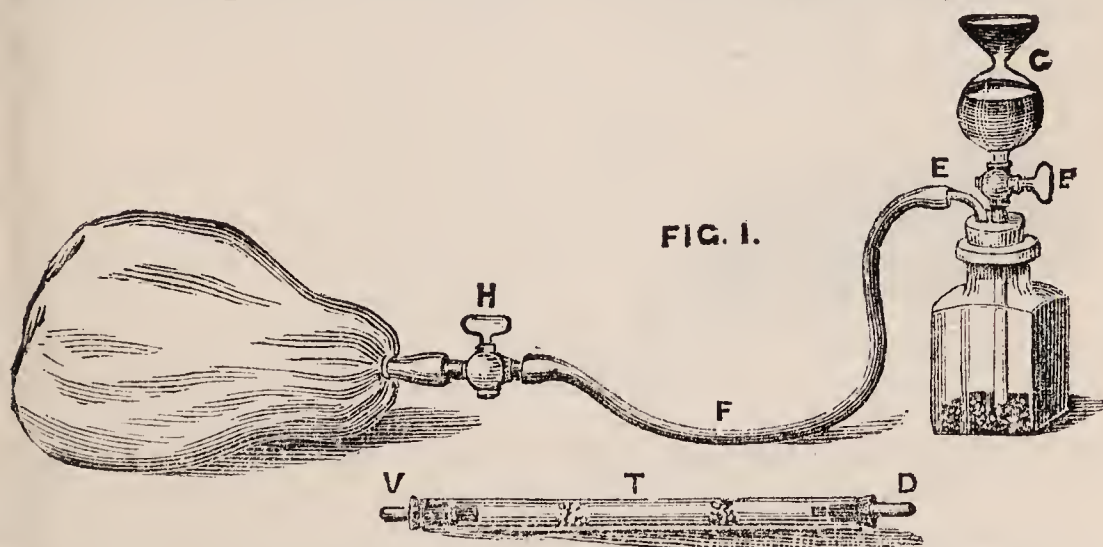
to a child of that age. The diet of the young child deprived of its mother's milk is too long a subject to enter upon here, but it is in these cases of the utmost importance, and I must again impress upon the reader the fact that this is a disease of impaired nutrition, and that all means must be directed to the remedying of that evil, so that it may be, and sometimes is, advisable to administer stimulants in the form of brandy, and even, as in severe diarrhoea, which is not an infrequent accompaniment, narcotics, as opium.—*British Med. Journal*, June 18, 1887, p. 1327.

25.—A DESCRIPTION OF THE APPARATUS USED IN THE TREATMENT OF PHTHISIS BY GASEOUS ENEMATA.

By J. SOLIS-COHEN, M.D., President of Philadelphia Med. Society.

Dr. Morel's apparatus for administering gaseous enemata, is based on the principle that a current of carbon dioxide passing over certain gaseous or volatile substances produces a disassociation of the gaseous elements, and drives them forward with it. It is necessary to produce a pure carbon dioxide; and then to pass it through a medicated liquid or over a volatile substance, and to force this gaseous combination into the intestine without permitting any reflux into the reservoir of carbon dioxide.

The carbon dioxide is prepared by dropping a solution of dilute sulphuric acid (200 grammes of sulphuric acid to the litre of water) on sodium bicarbonate. Chlorohydric acid was used in the earlier experiments, but a portion always escaped with the carbon dioxide, and produced irritation of the rectum and kidneys.

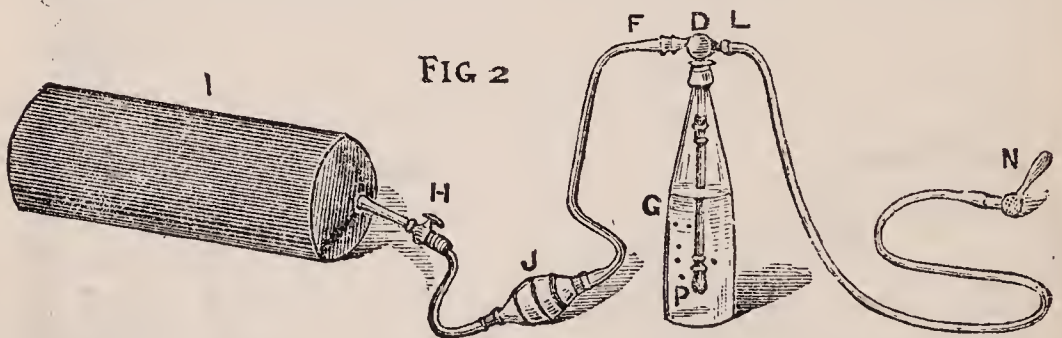


Carbon dioxide generator and reservoir. Glass tube, containing volatile medicament between two tampons of cotton. T. Medicament. V. D. Connections.

The apparatus for generating the carbon dioxide (Fig. 1) consists of a square bottle in which three tablespoonfuls of sodium bicarbonate are placed. The bottle is hermetically closed by a rubber

cork with two apertures, through one of which a glass tube extends to the bottom of the bottle, the upper portion (c) being expanded into a funnel and reservoir for the dilute sulphuric acid, beneath which is a glass stopcock (B) to regulate the descent of the liquid. The second aperture in the cork is filled with a curved glass tube (E) for the escape of the gas, and this exit tube is prolonged by a section of rubber tubing (F) for attachment to a rubber bag (I) of six litres capacity, in which the carbonic acid gas is to be collected. The mouth of this bag is furnished with a stopcock (H). The sodium bicarbonate being placed in the bottle, the cork is inserted, and the stopcock of the sulphuric acid reservoir is closed. This reservoir is then filled with the dilute sulphuric acid, say four ounces, and the stopcock is turned so as to allow the acid to drip on the soda. The carbonic acid gas is evolved immediately, the activity of the disengagement being controlled by the stopcock. A little gas is allowed to escape into the atmosphere, so as to drive off the atmospheric air in the bottle. Meanwhile the reservoir is rolled tightly so as to drive out all the air it contains, as far as possible, and is then attached to the exit tube for the gas and allowed to become filled with the carbonic acid. It is then removed and its stopcock is closed. It must be removed before the stopcock is turned, in order that pent-up gas in the bottle shall not break the apparatus. This is one of the points to which the physician must direct the attention of his nurse, before entrusting the patient to the attendant. Another point upon which stress must be distinctly laid, is the rolling of the bag to prevent retention of atmospheric air.

The gas is now ready for use. The reservoir (I) is attached to a



handball aspirator (J) with check valves at each end (Fig. 2). This is attached to a metallic T tube (D) passing through a cork which is intended to be placed in the neck of a bottle containing the medicated solution, preferably a highly charged natural sulphur water. The vertical portion of the tube is furnished with a double valve (P) to prevent aspiration of the liquid through which the carbonic acid gas bubbles, and contains an orifice at top for the escape of the gas into the distal horizontal branch, to which is attached a tube (L) connected with a nozzle (N) for introduction

into the rectum. As this tube could not be made here in time to supply me with the number of instruments I required, Mr. Kyner, Superintendent of the Polyclinic, has imitated the contrivance at my suggestion by two glass tubes placed in the cork just as in the cork of a modified Wolff bottle; the longer tube being supplied with a valve to prevent regurgitation. It answers equally well with the original. This T branch is placed in a bottle three-fourths filled with the sulphurous water—in this instance the Red Sulphur Spring water, of Virginia—and the aspirator is worked two or three times to drive out the atmospheric air in the bottle, another point to which the physician must emphatically direct the attention of his nurse. The nozzle is then inserted into the rectum of the recumbent patient and the injection made slowly. All clothing must be loose. With the hand on the abdomen, the amount of distension of the colon is noted, and when this is marked, or when pain is complained of, the process is suspended until absorption takes place, as manifested by relaxation of the tension; and then the process is resumed. Fifteen to twenty minutes are consumed in the process of driving the six litres of carbon dioxide through the sulphur water. The sulphur salt—e.g., sodium sulphide—is decomposed, hydrogen sulphide being formed, a portion of the carbon dioxide taken up to form sodium carbonates.

The only modification of the process I have permitted myself (for I deem it due in justice to Dr. Bergeon and Dr. Morel to test their method of administering the gas in their own way) is to place the mineral water bottle in a bath of warm water, which renders the injection more grateful. Within four minutes, sometimes within one, the sulphuretted hydrogen can be perceived in the breath, and be detected by paper saturated with plumbic acetate. It is prudent to have a bed-pan at hand in case there should be a call to stool. The injection should not be made upon the full stomach. This may produce emesis, it is said. You want all the room possible in the abdomen to prevent pressure upon a distended stomach and upon the diaphragm.

Three or four hours after a meal, or just before one, is the best time for injection. Two injections are given daily. I have found three hours after breakfast and three hours after supper the best periods. My patients have slept better after an injection just before bedtime, than after one, three or four hours after the mid-day meal.

At the first injections but half the contents of the reservoir of carbonic acid should be used, so that the parts and the system may be gradually accustomed to the process.

If the bottle of sulphurous water remain strongly impregnated after the injection, it may be tightly corked for use a second time. It is not necessary to have the bowels moved before an injection. Hæmoptysis and the presence of the menstrual period do not

contraindicate the process. Indeed, Dr. Bergeon has seen amenorrhœa relieved during this treatment, even when that condition had failed to yield to the ordinary methods of treatment for that special condition.

When the pulmonary lesions are extensive, and, in consequence, elimination of the gas takes place slowly, the injections must be made very slowly, or they will produce sensations of fulness in the thorax and in the abdomen.—*Medical News*, April 2, 1887, p. 366.

26.—ON THE TREATMENT OF PULMONARY DISEASES BY GASEOUS ENEMATA.

By EDWD. T. BRUEN, M.D., Physician to the Philadelphia Hospital.

[The technical details of this method are described in the preceding article by Dr. Solis-Cohen. We would remind our readers that this is not a well-established method of treatment, but only an experimental effort which may or may not succeed.]

In the Philadelphia Hospital for the past seven weeks, the treatment of various forms of pulmonary disorders by the use of carbonic acid gas impregnated with sulphuretted hydrogen has been practised, according to the plan inaugurated by Dr. Bergeon, of Lyons, and described by Bennett. In carrying out the treatment upon a considerable number of cases, much care and attention to detail have been necessary. Dr. McLaughlin, Resident Physician-in-Chief of the hospital, and Dr. Taylor, the Resident Physician in charge of my wards, have devoted a large share of their time to secure the proper administration of the gas, and owing to their valuable assistance it has been possible to give the attention necessary to a careful trial of the treatment.

The twenty-five cases of phthisis chosen on which to make a trial of the gas, included mostly patients suffering from advanced lesions, nearly all associated with cavities, marked bronchial catarrh, and some laryngeal lesions. At this time we are engaged in making a series of critical observations in reference to many essential features bearing upon the permanent value of the treatment, such as the best mode and frequency of the administration of the gas, the quantity and quality to be employed, and the effect upon the sputa, including the bacillus of tuberculosis. Our investigations into these subjects are still in progress; moreover, time is necessary to secure a proper estimate of the permanent beneficial effects of the treatment upon the lesions in the lungs. This report is, therefore, preliminary in character, and designed simply to record the results thus far secured.

The histories of the cases under treatment have shown that the element of suppuration, as it occurs in the pulmonary cavities, and in the bronchial passages, has been positively and promptly antagonized. The temperature has been reduced in a few days, and

within two weeks has frequently been brought to a normal point. In grave cases with advanced pulmonary lesions, the temperature has continued to rise a degree or so above the normal standard, but during the period of treatment in more than twenty cases, the temperature chart has always been positively modified.

Together with the reduction in temperature has followed the cessation of night-sweats in most instances, and in all, this symptom has been markedly lessened. In cases in which evidences of bronchial catarrh have been present, such as râles, and copious muco-purulent expectoration, the râles have disappeared, or have been decidedly decreased, and in nearly all instances the digestive system has been favourably affected, the tongue has become clean and natural, the appetite has increased, and also the ability to assimilate and appropriate food.

In most cases the gain in weight has been progressive and considerable, and the nervous symptoms incident to phthisis decidedly influenced for the better, and a more cheerful disposition secured. The immediate effect of the introduction of the gas upon the pulse, has been to lessen it by fifteen to twenty beats, and the respiration *temporarily* increased. The pulse-rate has subsequently been proportionate to the general condition of each individual case.

The effect of the treatment upon cases of bronchitis associated with emphysema has also been tried and the bronchitic element conspicuously modified.

A woman, æt. 40, entered the Philadelphia Hospital February 5th, with entire consolidation of the left lung of the variety frequently described as catarrhal or broncho-pneumonia. She had taken cold in December, 1886; had previously been a healthy, rather stout woman. The following symptoms, as abstracted from the clinical history, were present: Abundant muco-purulent expectoration, more than a pint in twenty-four hours; profuse sweats; pulse 120, temperature ranging from 100° to 103° ; anorexia, with coated tongue, and inability to receive and appropriate food. After treatment with the gas, administered twice daily since February 10th, she now seems to be convalescent. The temperature is normal, pulse 90, appetite excellent, and flesh increasing. The apparent beneficial effects were noticed within the first week, but it was four weeks before the patient was free from fever. The appetite improved within a few days from the first employment of the treatment, and, simultaneously, the nervous symptoms, such as hysterical tendencies and excitement, disappeared. In this instance all treatment, except the gas, was suspended. At this date the physical signs of pulmonary lesions seem to be disappearing, and the lung seems to be approaching the normal condition once more.

Four other cases among the group seem deserving of special mention. One of these is a case of basic cavity, involving almost the entire left lower lobe. In this case the effects of the gas treat-

ment upon temperature, sweating, appetite, &c., were conspicuous, and the gain in flesh the first four weeks was two pounds per week, but during the last two weeks there has been a loss of two pounds, although the other symptoms continue to improve.

Another case, also one of basic cavity, with marked pleural thickening, copious muco-purulent expectoration, but without other pulmonary lesions; in a word, a case suitable for treatment by the introduction of a drainage tube. The same good effects were noticed, yet although this case has been under treatment for several weeks, the temperature still remains somewhat above normal, and the secretion of pus in the cavity evidently continues, showing that some additional measures, such as those which may tend to secure perfect drainage, are still required.

Another instance is one of pneumo-thorax localized to the lower zone of the chest by adhesions of the lung. In this case constant cough, entirely preventing rest, night-sweats, elevated temperature, anorexia, and loss of flesh, were all marked. The gas treatment has been employed four weeks. The patient's condition has steadily improved, hectic and night-sweats and cough have ceased, and there has been a total gain of ten pounds. The patient takes daily exercise with freedom, and marked improvement in the pulmonary lesions can be recognised.

Finally, in the most sadly diseased case of the group, a man forty-five years of age, five feet ten inches in height, with cavities in both lungs, profuse bronchial catarrh, and weight reduced to 100 pounds, the progress of the disease has apparently been arrested, and although the lesions are too advanced to make it possible for him *ever* to leave his bed, yet the relief of the distressing symptoms of fever, hectic, cough, and expectoration, have certainly been manifest.

Summary.—1. In nearly all cases lasting effects have been secured in the reduction of temperature, suspension of night-sweats, lessened cough, and expectoration, and in some, all physical signs of bronchial catarrh abolished. 2. Temporarily reduction of pulse-rate fifteen to twenty beats, and temperature one-half a degree to one degree during the administration of the gas. 3. The amount of gas introduced into the bowel has varied from three quarts to a gallon at each injection. It has been introduced very slowly, from fifteen minutes to half an hour being demanded by the operation. The administration has been practised in most cases twice in the twenty-four hours. No injurious effects from the gas have as yet been observed. 4. Administration of the gas in different amounts and varying degrees of concentration is now being practised, and also investigations into the characteristics of the sputa. 5. In only one of the cases of phthisis the effects of the gas have been entirely negative. 6. In cases of phthisis complicated by intestinal lesions, experience is still insufficient to make it possible to state positive

results. 7. The ultimate value of the treatment can certainly only be established by time. The probable mode of action would seem to be antiseptic, and by reducing suppuration the relief of the attending serious symptoms, the patient is permitted to gain by food, exercise, and general treatment. Thus far, the value of the gas seems to be that of a useful therapeutic measure, rather than a curative plan of treatment. 8. The method of preparing the gas for use in the hospital is as follows: The carbonic acid gas is passed through a solution of chloride of sodium and sulphide of sodium in twenty-two ounces of water. The proportion of the salts has been increased in some cases, and some trials of other combinations are being made.—*Medical News*, April 2, 1887, p. 368.

27.—TREATMENT OF PHTHISIS BY GASEOUS ENEMATA.

By WILLIAM PEPPER, M.D., and J. P. CROZER GRIFFITH, M.D.,
Philadelphia, U.S.A.

[This paper constitutes perhaps the most important contribution to the evidence at present available of the results of Bergeon's treatment. A portion of the paper recounting some unpleasant effects and sources of fallacy are omitted for want of space. (See also Articles 27 and 28, and *Synopsis* of this volume.)]

Induced by the importance of the subject, and by the discouraging results of the various methods of dealing with phthisis, we commenced some experiments with Bergeon's treatment with gaseous enemata before reports of investigations by American physicians had appeared in the medical press. Our work has proceeded steadily but slowly, and this report is even yet chiefly of a preliminary nature, since many of the cases are still under observation.

In private cases we have used the Morel apparatus, substituting a solution of sodium sulphide—ten grains in one and a half pints of water—for the natural sulphur mineral water. In hospital practice we have sometimes pursued the same plan; sometimes proceeded in the following manner. The carbonic dioxide was procured already compressed in the large iron receivers in use for soda fountains. It was passed from these through the solution of sulphuretted hydrogen into a five-gallon gum bag, from which the patients then received the injections. Thus in one case the bag contained pure carbonic dioxide, and in the other the gas already medicated. It could not be discovered that it made any difference which method was followed.

The injections were given from one to three times daily; and from two to six or more quarts of gas were employed. The administration of the injection lasted from fifteen minutes to one-half hour or longer, except in those cases in which the tolerance of the bowel was very quickly exhausted, and but little gas could be taken.

It is to be regretted that the observations made are not in every case so complete as could be desired. This was often unavoidable; in some cases because patients were treated in homes where no accurate record of temperature and weight could be obtained; in others, in hospital practice, because patients sometimes left before a final examination of the lungs could be made, and the presence or absence of improvement of physical signs noted.

The total number of patients upon whom the treatment was tried equals 34. Ten of these cannot be regarded as test cases in any sense, since the injections were given during too short a time to allow of any conclusions being formed. In one of these there seemed to be inability to retain the gas in the bowel; in another ill-defined but unpleasant subjective sensations were produced, and the patient begged to have the treatment discontinued; a third patient died a few days after the enemata were begun; a fourth has but just commenced to receive the injections; in three cases colic was so intolerable that the treatment could not be persisted in, and three dispensary patients ceased their visits after two or three days. Deducting, then, these 10, there remain 24 test cases to whom the enemata were administered for from twelve to fifty-six days, the average being twenty-five. Other treatment was frequently combined with that of Bergeon. Had the results been favourable, this fact might be urged against the justice of our conclusions. As the sequel shows, it can have no influence, except to militate against occasional possession of beneficial action by the gaseous enemata.

Probably the most convenient method of estimating results is to study the symptoms individually, and to notice the effects produced on them by treatment.

Fever.—The greatest improvement was noticed in the reduction of fever. The total number of cases in which a daily record of temperature was kept equals 16. Of these there were four whose temperature was more or less reduced during the administration of the gas. In 11 there was no appreciable effect; and in one the fever actually seemed to increase. In another instance (one of the 10 excluded from the test cases) it rose quite decidedly during the four or five days in which the treatment was given; though this was probably only a coincidence. In no case was the temperature brought from a persistently febrile to a continuously normal condition.

Weight.—In 20 cases in which the weight was recorded at frequent intervals, there were eight in which the gaseous treatment was attended by more or less gain; the greatest increase being eight pounds in thirty-seven days. It is worthy of note that in this case there seemed to be no improvement in health. In six patients the weight remained stationary, and in six it was diminished, with or without a change in the severity of other symptoms. The increase

in weight took place chiefly in hospital cases, and we cannot but believe that it was due very largely to complete rest and good food.

Cough.—Improvement in this respect was not even so marked as in the preceding symptom. In 7 of the 24 cases there was said to be more or less diminution of cough. In two of these this was undoubtedly true, as testified to by the attendants and friends. In the others the well-known hopeful disposition of phthysical patients laid the truth of their statements open to suspicion. Moreover, in one of the eight the removal of a large amount of fluid from the pleural cavity was probably the chief agent in producing decrease of cough, if any existed; and another patient was taking a cough mixture as well as the gaseous treatment. In three cases the cough seemed actually to grow worse;—this being probably *post hoc* merely.

Expectoration.—As regards the diminution of the amount of expectoration, we were able to come to more definite conclusions, since the question did not depend to such extent on the statements of the patients. Out of 24 cases the quantity was somewhat decreased in four instances. In five patients it became more abundant, and in one of these, to whom the gas had been given fifty days, the increase was very marked. In the remaining 15 no effect could be perceived.

Bacilli.—The sputum of 30 patients was searched for tubercle bacilli, and the microbes found in 27 instances. A second examination was made at the close of the treatment in only 11 cases, and in but four of these was there even an apparent diminution in the number. It is extremely doubtful whether there existed here any real decrease in the absolute quantity of bacilli in the sputum.

Dyspnœa was recorded in comparatively few cases, and in only three of these did the patients claim that they had experienced any improvement.

Night-sweats.—Here, too, the cases reported are not numerous, as many of the patients did not suffer from them. In one case they were checked, and in seven unimproved.

Physical examination.—The result of the physical investigation of the lungs of each patient was noted at the beginning of the gaseous treatment; and a final examination was made at the close of the treatment in every instance possible. As already explained, the latter could not always be accomplished. Nevertheless, a final study of the lungs was made in a considerable number of cases, and in *not a single case* was any improvement found. Even the patient who of all the 24 had made the greatest—and really very remarkable—progress, exhibited quite as many râles as fifty-six days before, when the treatment was commenced.

General condition, &c.—As regards the general condition of the 24 test cases under observation, there were but four in which any improvement could be noticed (two decided, two slight), apart from the amelioration of the symptoms already mentioned. Seven

patients grew worse, and one died. No observations were made on the temporary effect of the gas on *pulse* and *respiration*. The *appetite* was sometimes increased, but usually not much affected. The enemata had a decidedly *hypnotic* influence in three cases.

To summarise in a few words our observations:—Febrile temperature was sometimes lowered, but never to any great extent. Cough and expectoration were occasionally lessened, but oftener unaffected, and sometimes even increased. Weight was oftener lost or stationary, but a decided gain was frequently made; due, perhaps, partly to the gas, and, no doubt, in part to the improved conditions of life. Dyspnoea and night-sweats were rarely benefited; the physical signs were in no case altered; the general health was but seldom made better, and severe colic was a frequent and annoying symptom.

Our conclusions—so far as they can be formulated in a preliminary report of comparatively few cases—are: That the treatment of phthisis by gaseous enemata has had very undue value attributed to it; that it is seldom of any real benefit, but that it may prove serviceable in occasional cases.—*Medical News*, July 2, 1887, p. 10.

28.—ON THE INDICATIONS FOR THE CLIMATIC TREATMENT OF PHTHISIS.

By JAMES A. LINDSAY, M.D., Physician to the Consumption Hospital, Thronemount, Belfast.

[Dr. Lindsay concludes a systematic and instructive review of the whole subject of climate in relation to the treatment of phthisis with the following remarks:]

In many cases there are few more difficult problems than to determine whether a given case of phthisis will respond to climatic treatment, and what type of climate affords the best hope of success. Speaking generally, only chronic cases with fair reaction are suitable for climatic treatment. If the disease has a well-defined onset and threatens to run an acute or semi-acute course; if the patient steadily loses ground and shows no gain in weight or other sign of rally under treatment; if the process in the lung is progressive and there are no evidences of repair—in each and all of these cases the interests of the patient will be best served by vetoing climatic treatment. The patient will die soon and die anywhere, and he may as well be allowed to pass his last days amidst the comforts and sympathies of home. Cases marked by circulatory weakness, with fast, feeble, fluttering pulse, slight cyanosis, and persistent coldness of the extremities, are very unfavourable for climatic treatment, and should on no account be sent to the mountains. Cases in which laryngeal or intestinal ulceration or renal complication have supervened upon the ordinary type of the disease should be allowed to die at home. Cases in which anæmia appears early

and is well marked are unlikely to respond to climatic treatment. On the other hand, we see a vast number of cases of phthisis in which the onset is very gradual and the constitutional involvement for a long time slight. Such cases nearly always improve, even in this climate, under a system of high feeding, fresh air life, and cod-liver-oil, and I entertain no doubt that a considerable proportion of them may be completely cured by removal to a suitable climate and the adoption of a prudent mode of life. In determining the climate to be chosen, it used to be taught that the condition of the bronchial mucous membrane was the chief guide: that cases with much bronchial catarrh should go to a dry climate, cases with dry irritable mucous membrane to a moist sedative climate, and so on. I greatly doubt the utility of this rule. Phthisis is not bronchitis, and all analogies for its treatment drawn from our knowledge of bronchitis are not merely unfruitful but misleading. In the therapeutics of consumption we have given up directing our medicinal treatment to the bronchial mucous membrane, and I am unable to see why we should still base our climatic treatment on a theory which we thus implicitly acknowledge to be unsound. Hippo, paregoric, and squills have almost disappeared from our treatment of phthisis: and climatic sanatoria, which soothe the patient's cough at the expense of his appetite and strength, must follow them into deserved oblivion. The consumptive does not die of his cough. He dies of progressive wasting. We have thrown aside expectorants and anodynes in favour of good food, exercise, and such aids to nutrition as cod-liver oil, hypophosphites, maltine, &c., and we must, when possible, choose climatic resorts which are tonic and stimulant rather than those that are mainly sedative. The vital point about any climate is, will it promote nutrition? In early uncomplicated cases with vigorous circulation I think the mountain climates offer the best hope. If the circulation be feeble, or if there be much nervous irritation, the choice will lie between the sea voyage and residence in such dry inland resorts as Upper Egypt or the interior plains of Australia. The sea voyage has the great recommendation that it rarely does harm, except in those very advanced cases which are beyond the reach of all treatment. If the patient objects to the mountains and shrinks from the long sea voyage, I think Algeria or Morocco should be preferred to France or Italy. Let me say, in conclusion, that climatic change is a snare instead of a help, a curse rather than a blessing, if it be regarded as a complete therapeusis in itself, and as enabling the patient to dispense with the usual lines of treatment and his customary precautions. Climate is not a specific. At best it is only a condition of cure, and we may expect it to be effectual only when the patient's food, habits, occupation, and mode of life are wisely regulated so as to facilitate its beneficent influence.

—*Lancet*, April 30, 1887, p. 873.

29.—ON IODOL, AND ITS USE IN THROAT AFFECTIONS.

By R. NORRIS WOLFENDEN, M.D. Cantab., Senior Physician to the Hospital for Diseases of the Throat, Golden-sq., London.

Iodol, or tetra-iod-pyrrol (C_4I_4NH) was discovered by Silber and Ciammician, and first used for clinical purposes by Mazzoni. For the purposes for which iodoform is used it appears to have value quite equal to this body, and is infinitely preferable from the fact of its being a pleasant and nearly odourless body, instead of nauseous and foul smelling like iodoform. The fact that the drug appears to be almost unknown in this country induces me to offer some remarks upon its use. It is undoubtedly a fact, that no constitutional phenomena follow the long-continued use of the drug as an external application, and it is thus free from one objection which can be urged against iodoform.

Iodol is undoubtedly antiseptic. (I am aware that doubts have recently been cast upon the antiseptic powers of iodoform, but this scepticism scarcely accords with common experience.) This antiseptic power of iodol is due to the liberation of free iodine. Added to fluids which readily undergo decomposition, iodol keeps them fresh for months.

I will here indicate the forms under which the drug may be used. My own experience is more particularly as to its use in throat affections. (These preparations have been made under my directions by the dispenser at the Throat Hospital—Mr. Stenlake.)

(1) *Powder of Iodol*.—The pure powder may be used. There is no need to mix it with starch or sugar, &c., since being fine, it is readily dusted over a raw surface, or insufflated into the throat. Possessing no toxic power, it is of more importance to cover the diseased surface than to measure the dose. For all laryngeal, pharyngeal, and most nasal and oral conditions this is, perhaps, the most generally useful application.

(2) *A Solution in Alcohol and Glycerine*.—This was Mazzoni's original application: iodol, 1 part; alcohol, 16 parts; glycerine, 34 parts. This forms a good application by means of the brush, or may be used as a very coarse spray.

(3) *Iodol, 1 drachm; Ether, 1 ounce*.—This forms a clear brown solution, useful for application either by the spray or brush. The ether quickly evaporating leaves the powder *in situ*. It is useful for naso-pharyngeal atrophic conditions.

(4) *Iodol, 1 drachm; Glycerine, 1 drachm; Vaseline, 7 drachms*.—This is a modification of one of Rumbold's sprays. It is a very soothing application for pharyngeal conditions. It requires to be warmed before using.

(5) *Iodol Pastilles*.—(Iodol, 1 grain; glycerine, 1 minim; gly-cogelatine, 18 grains.) These are very useful for chronic pharyngeal conditions, and are much preferable to iodoform pastilles.

- (6) *Iodol Bougies*, containing $\frac{1}{2}$ a grain iodol in each. These are made for me, for use in diseased nasal conditions.
- (7) *Iodol Wool*, 10 per cent., for tampons, &c.
- (8) *Iodol Gauze* for dressings.

I have used iodol in a number of cases of laryngeal phthisis, with very beneficial results. Adopting Lublinski's method I have applied it as an insufflation of the pure powder, in some cases once daily, in others three times a week.

Ulcerations in the inter-arytenoid region have cleansed and healed up completely, and the characteristic arytenoid œdema has diminished under its influence. Tuberculous ulcerations of the epiglottis and pharynx have benefited by it and been arrested. and the distressing pains on deglutition which accompany this condition are much relieved by iodol. In some patients, in whom solid food was entirely interdicted by reason of the pain on swallowing, deglutition has become comparatively easy, under daily laryngeal insufflations of iodol. If the iodol is carefully and accurately applied over the ulcerations it will completely heal them. I have cases now under treatment in which there was originally extensive laryngeal ulceration, but in which now all active mischief is arrested. Iodol remarkably diminishes the cough of this condition. It is not to be supposed, of course, that insufflations of iodol, or of any other substance, will cure extensive phthisical disease of the larynx, but they will certainly arrest ulceration, relieve pain and cough, and allow the patient comparative comfort. The iodol remains for a long time in contact with an ulcerated surface. Sprays of chloride of zinc (gr. xxx. ad ȝi.) have in some cases been combined with the iodol treatment. For ozæna, I find that iodol tampons are effective in arresting the foul smell of nasal caries, or for the true ozænic conditions independent of carious bone.

As a spray or brush application it is very beneficial for nasopharyngeal atrophic catarrhs. For the ordinary forms of pharyngitis accompanied or not with follicular disease I find it a very serviceable insufflation, and one which, moreover, is not unpleasant to the patient. The pastilles are also grateful in these conditions. It is important that the application of iodol, as of any other medicament, to the nasal, pharyngeal, or laryngeal mucous membrane, should be preceded by thorough cleansing of these parts with the alkaline lotion, so as to ensure the bringing of the powder into direct contact with the diseased tissue, and not merely to lay it on the surface of the mucus. I have found it produce excellent effect in extensive ulcerations of the inside of the cheek, dusted over the exposed surface twice daily. In cases where there is great pain, the addition of $\frac{1}{8}$ — $\frac{1}{4}$ grain morphine to the iodol insufflated will be found very advantageous.

Since iodoform has found a place in our Pharmacopœia I think it desirable to call attention to the superior attractions of iodol,

which can be used for all purposes for which iodoform is usually chosen. I desire also to call particular attention to its usefulness in nose and throat conditions. It appears to me to be quite unknown to the majority of English practitioners, although continental testimony exists as to its value.

To summarise : iodol is odourless or nearly so, tasteless, produces no constitutional effects, contains nearly as much iodine as iodoform, and parts with it more readily ; it is antiseptic, anæsthetic, a promoter of granulation and healing ; arrests suppuration, and deodorises foul secretions. Possessing thus all the virtues of iodoform, it is surely preferable on account of its pleasant and slight odour and absence of taste. It does not disturb the stomach as iodoform does. I am induced to give this short account of the drug in order to bring it to the notice of English practitioners, who will find it, I am convinced, a very useful addition to their daily pharmacopœia.—*Practitioner*, May, 1887, p. 336.

DISEASES OF THE ORGANS OF DIGESTION.

30.—ON GASTRALGIA AND ITS TREATMENT.

By Sir JAMES SAWYER, M.D., F.R.C.P., Senior Physician to the Queen's Hospital, Birmingham.

Gastralgia is a very painful affection. The pain has marked characteristics as to position, duration, and onset, and as to its sexual, constitutional, and temperamental associations. The disorder has been variously called gastralgia, cardialgia, and gastrodynia. The nomenclature of the Royal College of Physicians authorises the last name, and it gives "stomach-ache" as a popular synonym. The malady is usually held to be a neurosis, affecting the gastric nerves. According to Dr. Leube gastralgia is limited essentially to the sensitive sphere of the gastric nerves. That the disorder is a neurosis is not quite proven—indeed, it is scarcely demonstrable. But the idea is a good "working hypothesis," which I commend to you. Romberg distinguished two forms of gastralgia : one, which he called gastrodynia neuralgica, he held to be a hyperæsthesia of the gastric branches of the pneumogastric nerves ; the other, which he called neuralgia coeliaca, he regarded as a hyperæsthesia of the solar plexus. Although Romberg has indicated what he thought to be the signs and conditions upon which a clinical differentiation of these varieties of gastralgia might be established, I agree with Niemeyer that in a given case it cannot be determined whether the patient's pains occur in pneumogastric or in sympathetic distribution. As Hensch has taught, although the distinction may rest upon a correct theoretical basis, it is one which is inapplicable and worthless in practice. It has been objected that the term gastralgia is unscientific, because it is

only the name of a symptom. In practice, however, and especially in private practice, we meet with many cases for which I know of no other name; and I apply the name to a clearly conceived and clearly defined condition. I call a case one of gastralgia in which pain, deep-seated and paroxysmal, in or about the stomach, of a neuralgic or quasi-neuralgic character, is the leading symptom. But this statement is inseparable from the following important qualification. Pain of the character and position described can only be regarded as that of gastralgia when it is unaccompanied by marked evidences of gastric or gastro-hepatic catarrh, and when, also, it is wholly unaccompanied by physical signs of structural disease either in the stomach or in its neighbourhood. The latter part of this definition involves an essential and a negative conclusion. A negative conclusion, of course, in any case is proverbially difficult. Such a conclusion should only be formed in a supposed case of gastralgia after a complete examination of all the circumstances. Further, a diagnosis of gastralgia should only be held in the conduct of a case of pain in the gastric region as a conclusion which is subject to frequent diagnostic revision; that is, such a diagnosis can only be continued when repeated physical exploration fails to reveal any other "coarser" interpretation of the patient's suffering. I desire to impress this last statement upon you as an important clinical caution, which you must especially remember when your patient is a man at or beyond middle life. In such a person the danger of mistaking a graver and more material condition for gastralgia is especially imminent. The diagnosis of gastralgia is one which should never be lightly made, nor negligently maintained. Pain in the gastric region, you should always remember, may long appear to be simply gastralgic—that is, independent of any local organic basis,—when the appearance of a tumour, or the discovery of an aneurismal pulsation, or a sudden gastric or intestinal hemorrhage may prove a diagnosis so comparatively favourable to be tenable no longer.

Romberg's short and vivid description of an attack of the severest gastralgia has been accepted as classical. Let me read it to you. He wrote: "A violent contracting pain at the pit of the stomach supervenes suddenly, or after being preceded by a sense of oppression; it generally extends to the back, there is a sense of fainting, the face is fallen in, the hands and feet cold, and the pulse small, cramped, and intermittent. The pain attains such a pitch as to cause the patient to scream out. The region of the stomach is either swelled and distended like a ball, or, as is more frequently the case, it is drawn in, and the abdominal parietes are tense. It is common to find pulsation at the epigastrium. Pressure is not only well borne, but the patient frequently forces the pit of the stomach against some firm object, or compresses it with his hands. Sympathetic sensations occur in many instances in

the thorax, under the sternum, or in the pharyngeal branches of the vagus nerve, while they are seldom met with in the superficial parts." This is Romberg's account of a typical and violent seizure of that form of gastralgia which he called *coeliac neuralgia* or *paroxysmal hyperæsthesia* of the solar plexus. You may accept his clinical portrait as accurate, although it is doubtful whether he was correct in localising the pain solely in nerves of the sympathetic system. Under the heading of *gastrodynia neuralgica* you will find in Romberg's excellent book a faithful clinical description of the milder cases of gastralgia, or "attacks of painful sensations in the stomach," especially as they are manifested in association with the nervous temperament, and with the reflex expressions of sexual irregularities in women. I have ventured from my reading and clinical experience to form the opinion that Romberg did not describe two distinct diseases under the several names of *coeliac neuralgia* and *neuralgic gastrodynia*, but merely one and the same affection, which I have been accustomed to call gastralgia, as he met with it in different degrees of severity. Of course a dual interpretation of painful neuralgic affections in the gastric region has an anatomical basis in the dual nerve supply of the stomach—namely, in the innervation of the organ by nerves of the sympathetic system, and also by the vagus. But, truly, in the words of Leube, "in the present state of uncertainty with regard to the mode of action of the gastric nerves, especially with regard to the conditions of sensation, and in view of the anastomotic connections between the vagus and the sympathetic in the stomach, such a division of *cardialgia* appears to be both theoretically and practically untenable."

Gastralgia may occur at any age. It is rare at the extremes of life. It is rarer in children than in old people. It is most commonly met with in early middle life. Like all neuralgias, it follows hereditary constitution, and is especially associated with the nervous temperament. I advise you to study temperaments. In them you will find many clues to morbid tendencies. Temperaments denote distinct types of physical form, of habits, and of capacities. A man of nervous temperament is mostly slightly built, and he is generally in a hurry. He is hyper-sensitive to all influences, and to pain amongst them. All his movements are quick, and he has a strong tendency to "fidget" with his ideas or with his extremities. His speech betrays him; he talks volubly, abruptly, and earnestly, often splitting up his phrases, or recalling and correcting them, and especially modifying qualifying words.

As in all neuralgias, women are more liable to gastralgia than men. As, also, in all neuralgias, the manifestation of gastralgia is favoured by every condition which reduces the vigour of a patient's "general health." Gastralgia is a frequent neuralgic development of hysteria; and, in women who are not hysterical, its incidence is

often determined by the prostration of anæmia or by the exhaustion which arises from prolonged uterine discharges. In men gastralgia may be a consequence of sexual excesses or of masturbation. All these circumstances must be remembered and dealt with in the causal diagnosis and effective treatment of the disorder.

The diagnosis of gastralgia is not usually difficult. Pain is the leading symptom. When we are satisfied as to the genuineness of pain in the region of the stomach, its correct interpretation largely depends upon an accurate appreciation of various diagnostic data *per viam exclusionis*. I cannot deal exhaustively with this part of the subject to-day. I desire, however, to give you these three cautions, which I have learned in practice: (1) Gastralgia is not a wasting disease. (2) It is not safe to diagnose cancer of the stomach until you can *feel* the cancer. (3) Do not diagnose ulcer of the stomach until you have *seen* blood from the stomach, either in hæmatemesis or melæna. You may take it as a clinical truth, as the late Dr. Wilson Fox clearly insisted, that pain arising in the stomach when the organ is empty, and relieved by the ingestion of food, is almost diagnostic of its nervous origin and nature. Sometimes the pain of ulcer or cancer of the stomach may for a time appear to be relieved by taking food, but such a condition is highly exceptional. There is sometimes a kind of gastric "sinking," even amounting to craving of food, in gastric catarrh, and with greater rarity probably in gastric ulcer; the local discomfort is not, however, relieved by feeding, but, on the contrary, usually made worse. There is another diagnostic sign of great importance in the recognition of gastralgia. It is this: firm pressure over the region of the stomach relieves the local pain. Some patients find this out for themselves, and press a closed hand or the upper rail of a chair strongly against the epigastrium, and so find relief.

My chief object in drawing your attention to the subject of gastralgia is to explain to you a plan of treatment which I have found very successful. I can tell you of a drug which cures gastralgia. Before you prescribe it, however, you ought to find out if there be any prominent pathological concomitants or causal antecedents of the disorder, and deal with them. Anæmia, sexual excess, overwork, work under wrong conditions, uterine discharges, masturbation, &c., must be appropriately met. But for the cure of the gastralgia something more is usually necessary. Of all the directly therapeutic results in medicine with which I am acquainted, one of the most demonstrable is that which can be produced by the suitable exhibition of arsenious acid in uncomplicated gastralgia. I give 1-24th of a grain of arsenious acid, made into a pill with 2 grains of extract of gentian, thrice daily, between meals. The use of this remedy must be continued for a few weeks. In a case of moderate severity no other medicinal treatment is necessary. The gastralgic pains become less frequent and less

severe, and recovery is steadily and surely attained. In severer cases I use some form of counter-irritation to the epigastrium, and I usually employ a rubefacient liniment of ammonia. In the severest cases vesication by a fly-blister is of service, and the blistered surface should be kept raw for some days by means of a daily dressing of savin ointment. But you must not rely upon treatment by drugs alone. Every hygienic adjuvant which tends to raise the strength of the patient is of high value in the cure of gastralgia. I especially advise you to make sure the sufferer feeds well and fully. The diet should be generous. A "dyspeptic" regimen makes a case of gastralgia worse. When you are satisfied there is no, or but slight, gastric catarrh in the gastralgia of a fairly vigorous adult, you should direct a dietary after this plan:—Breakfast: bread-and-butter or dry toast, with some fresh white fish, or some cold chicken or game, or a mutton chop, with a breakfastcupful of cocoa or weak tea or coffee. Dinner (1 p.m.): fresh beef or mutton, with bread, potatoes, cooked green vegetables, a fruit tart or a farinaceous pudding, with a glass of light bitter ale. Tea (at 5 p.m.): bread-and-butter or dry toast, with a small cupful of cocoa, tea or milk-and-water. Supper (not later than 9 p.m.): white fish, or some cold chicken or game, or a little cold meat, with bread, and a glass of ale.—*Lancet*, Aug. 13, 1887, p. 299.

31.—TREATMENT OF HABITUAL CONSTIPATION AND OF BILIOUSNESS BY PODOPHYLLIN RESIN ALONE, OR IN COMBINATION WITH BELLADONNA AND STRYCHNIA.

By F. J. B. QUINLAN, M.D., Physician to St. Vincent's Hospital, Prof. of Materia Medica, Catholic University Med. Col., Dublin.

Every practical physician is familiar with the frequent occurrence of habitual constipation in patients of the better-off classes, particularly females, and there are few ordinary therapeutical problems more difficult to cope with. This habitual constipation arises from three different factors prevailing in different degrees in different cases, viz., torpidity of liver, deficient peristaltic action of the intestines, and want of attention to the regularity of bowel action on the part of the patient; and this deficient action is too often combated by the habitual use of saline cathartics of strengths varying from potent doses of magnesium sulphate to aperient waters of the *Æsculap* or *Hunyadi Janos* type, which, although giving temporary relief, end by making matters worse. This constipation is occasionally varied by so-called "bilious attacks," with their accompaniments of headache, furred tongue, odour from the breath, and aversion to food; and recourse is generally had to mercury, either in the form of blue pill or of calomel, and this treatment, although giving relief, is at best questionable, for it must always be remembered that mercury is a distinct blood

impairer, and that troublesome salivation occasionally arises from mercurials given for aperient purposes only. Podophyllin, the resin obtained by acting with alcohol upon the rhizome of *podophyllum peltatum*, has long been known as "vegetable calomel," and if judiciously administered will accomplish with ease and safety everything that calomel can effect, either as a liver stimulant, or as a cholagogue cathartic. Moreover, it has none of the blood-impairing qualities of calomel, and it never salivates. The great impediment to its use hitherto has been its insolubility in water or in aqueous fluids, and hence we have even in the present edition of the Pharmacopœia only one preparation, viz., the tincture of podophyllin containing one grain of the resin to each drachm of proof spirit. This helps us but little, for if the tincture be added to water the resin at once precipitates; and it is always necessary to keep it in suspension by emulsifying it with gum acacia. If podophyllin be made into a draught in this manner, some of the resin will be certain to remain in the bottle, and this is an important consideration with a dose ranging from a quarter of a grain to one grain. The only feasible alternative is to place the desired quantity of podophyllin in a pill; but this is open to the objection that pills frequently pass through the intestinal canal very slightly changed, and hence it is that the difficulty and uncertainty attending the use of podophyllin have greatly limited its use. A form of podophyllin capable of being administered in aqueous vehicles has long been a pharmaceutical desideratum, and this want has been fully met by Hockin's *Liquor Podophyllin*, each drachm of which contains one quarter of a grain of the resin. One or two drachms of this added to an ounce or two of water will produce a perfectly clear mixture, similar in colour to pale sherry, but without the least precipitation of the resin, and we are thus enabled to introduce into the system the exact quantity of podophyllin desired. Comparing the therapeutical action of this drug with those of calomel and of mercuric chloride, it may be observed that minute doses of the higher chloride or sublimate stimulate the liver and increase the flow of bile; and if very small doses of calomel do the same, it is considered that this is owing to the conversion in the system of the mercurous into the mercuric chloride. Larger doses of calomel diminish the secretion of bile, but cause a great effusion of secretion from the upper portion of the small intestine; and this is the explanation of the great relief afforded by purgative doses of calomel in the so-called bilious attacks, which are really cases of cessation of secretion in the upper portion of the small intestine, a want which leads to the locking-up in the blood of numerous excretions, the retention of which causes the distressing symptoms accompanying a bilious attack. It has been objected to this view that great quantities of bile are detected in cholagogue evacuations, but this is easily explained. In ordinary digestion much of

the bile mixed with the intestinal contents is reabsorbed by the small intestine, and returns to the liver by the vena porta, to be again excreted by the liver; and thus it is that the same bile is used over and over again, constituting what is now known as the enteric biliary circulation. When a cholagogue purgative operates the bile in the intestines is washed out too rapidly to allow of this re-absorption, and this is the reason of the copious bilious evacuations. A cholagogue cathartic may be either three or four grains of calomel or one grain of podophyllin; but with the former the secretion of bile is actually diminished, while with the latter it is increased, and both remedies cause a great secretion outflow from the upper portion of the small intestine. A very effective cholagogue draught can be made by combining half an ounce of the Hockin podophyllin liquor with ten minims of tincture of capsicum and enough compound decoction of aloes to make up two ounces. This will give unfailing relief in bilious attacks, but in severe ones it may have to be repeated after an interval of three or four hours.

A frequent cause of constipation is the simple torpidity of the liver, so common among persons of sedentary habits and occupations, and taking little or no exercise. In such cases immediate relief can be obtained by taking three times a day and shortly before meals a drachm of Hockin's liquor podophyllin combined with a bitter tonic, such as quassia, calumba, or gentian. The constipation disappears as if by magic, abdominal fulness is diminished, and cheerfulness of spirits is obtained. Natural evacuations occur once or twice a day; and if moderate exercise be superadded, the cure becomes permanent.

So much for torpidity of the liver; but something must be done to encourage the peristaltic action by which the intestines propel their contents from the stomach towards the anus; and for this purpose small doses of extract of belladonna are most efficacious. In addition to stimulating and strengthening peristaltic action, these small doses of belladonna cause a determination of blood to the gastric and intestinal mucous surfaces highly favourable to the secretion of the gastric and other digestive juices. Hardly less active in stimulating peristaltic movements are minute doses of strychnine, which, besides that useful office, act as an excellent stomachic bitter tonic. There is no better way of combining these three remedies than Hockin's liquor of podophyllin, belladonna, and strychnine, each drachm of which contains one quarter of a grain of the first, one-eighth of the second, and one-thirtieth of the third. One drachm of this liquor taken three times a day in combination with a bitter tonic will prove an effectual remedy to the habitual constipation arising from hepatic and intestinal torpidity.

Lastly, a word must be said as to the influence of habit in promoting regular intestinal action; and there is no doubt that many

of our physiological functions can be thus influenced. Persons engaged in ordinary diurnal occupations become drowsy and go to sleep at night, and if kept up till morning light find a difficulty in going to sleep except under great fatigue; whereas those engaged all night in producing the morning papers are bright and wakeful at the ordinary bed hour, but go to sleep with ease in the morning when the rest of the world are getting up. So it is with the action of the bowels; and there is no doubt that a steadily continued daily effort to evacuate them every morning after breakfast, will in the end bring on complete regularity of this great physiological function. Persons in charge of youth should inculcate this habit; and by so doing they will greatly contribute to the future health and well-being of those placed under their guardianship. It is too often the practice, from a feeling of mistaken delicacy, to ignore these bodily necessities, particularly in female schools; but it is at last fortunately dawning upon parents and instructors that physical training is of co-ordinate importance with mental education, and much injury and suffering will thereby be prevented to the growing generation.—*Medical Press and Circular*, 1887.

32.—ON THE TREATMENT OF GASTRO-INTESTINAL DISORDER IN SUCKLINGS.

By JAMES CARMICHAEL, M.D., F.R.C.P., Ed., Physician to the Royal Hospital for Children, Edinburgh.

The treatment of gastro-intestinal disorder in sucklings naturally evolves itself out of a careful consideration of the etiological conditions existing at the time in any given case. In regard to breast babies we naturally look to the mother, and direct our treatment accordingly. Probably one of the most common causes in these cases is deficient quantity of milk, which is almost invariably accompanied by too frequent suckling, which I have already indicated directly tends to produce indigestion. The remedy for this is, regular suckling at longer intervals, the deficient quantity of food being supplied by artificial means. In spite of the prejudices which mothers and nurses often have to a combination of the two methods of rearing, there can be no doubt it is perfectly successful when properly carried out under the direction of the physician. A great deal can sometimes be done by due attention to the health of the mother, in producing increased secretion. If she be plethoric and addicted to over-feeding, careful and suitable regulation of the diet, and the use of simple purgatives, will increase her secretion. If she be anæmic, a liberal diet, with malt liquor if it agree with her digestion, along with ferruginous tonics, is often useful. Sometimes defective secretion is due to simple torpor of the mamma. In this case irritation of the nipple, emollient applications to the breast, with gentle friction, often does good. Change of air in all these

cases is frequently beneficial. It is in such cases that the so-called galactagogue remedies may be tried. An infusion of the leaves and stalks of the *Ricinus communis* has been recommended as useful, and may be tried.

Sore Nipples must be carefully treated if they exist, and often after they are healed lactation goes on satisfactorily.

Galactorrhœa is perhaps the most intractable condition we have to deal with in the mother. I know of no specific remedy. Change of air and diet may be tried. I have little faith in the efficacy of the classical belladonna. Iodide of potassium is sometimes of service.

The majority of cases of severe gastro-intestinal catarrh occurs in bottle babies, and the successful treatment of such cases is often attended with much difficulty. Success can only be attained by a rational and scientific appreciation of three points,—the constitutional condition of the child, its hygienic surroundings, and the food on which it is being reared. In regard to the two first conditions, I have already indicated the difficulties which we have to encounter; and these, if they exist, must be treated in the best way at our disposal. If the constitutional state of the child and the hygienic conditions are not unfavourable, it will generally be found that the food is at fault.

The first thing to be done after satisfying ourselves that we have to deal with a catarrhal condition of stomach or bowels caused by improper food, is to decide whether the cause is due to improper quantity or quality of the food. If the child is being fed too largely or too frequently, directions must be given to feed it at regular periods and in proper quantity. If the quality of food is the cause, it is necessary to determine the kind of indigestion, and this can only be done with success by a careful examination of the ejecta or dejecta, as the case may be. By this means alone we get almost all the indications necessary for successful treatment; without it we are necessarily groping, to a great extent, in the dark. Infants may suffer from indigestion of the proteid, starchy, or fatty elements of the food. Thus, if the ejecta or dejecta contain hard lumps of casein, or of starchy matter, or fatty material, we must alter the quality of the food accordingly. As a rule, when gastro-intestinal catarrh is severe, it is desirable to stop the food whatever it may be, and to substitute some light bland form of nourishment. If the indigestion be of starchy elements of food, light chicken tea or veal tea may be used for a few days with advantage; if the proteid elements are not digested, a decoction of barley, or wheat, or rice may be tried; if the fatty elements are at fault, skim milk must be used, well scalded, or barley decoction should be added. The child should be fed with smaller quantity than usual, and the interval between the feeding carefully regulated according to the quantity allowed. Should the infant suffer from thirst, which is usually the case, a few spoonfuls of fresh cold water

should be given in the intervals of feeding. As the child improves, we must decide, from a careful individual consideration of the case, what form of feeding we are to adopt, and try it accordingly, taking care that the food is properly diluted at first and regularly given. I would here bear testimony to the great value of zymine in rendering milk more easily digestible. One or two grains, with a little sodæ bicarb. added to the feeding-bottle, often renders the milk easily assimilable by the child. The milk should be put into the bottle hot and the ingredients added, allowing it to stand for twenty minutes before use.

We are often called to see a child so feeble and emaciated from vomiting and purging that it is unable to suck. In such a case the child must be carefully fed with the spoon and a drop or two of old brandy or sherry wine added to each feed, or, perhaps, given immediately before it. It will often be found that a child which is unable to suck a tube bottle will be able to draw from the old-fashioned boat-shaped bottle, especially if a calf's teat is used instead of an india-rubber one. Indeed, in all cases, for many reasons, I much prefer the old-fashioned bottle, the tube bottle being, in my opinion, more convenient for the nurse than safe to the child.

Having given directions as to the feeding of the infant, we should next attend to its clothing, and consider the propriety of any external applications that may be necessary. The feet and abdomen should be kept warm, a soft flannel binder being worn. If the skin is dry it should be sponged several times a day with tepid water. The belly may be anointed with warm olive oil or vaseline often with great advantage. Sometimes a light emollient poultice over the stomach will give great relief; often a simple sinapism to the epigastrium, especially when there is much vomiting, is very useful. The nursery should be well ventilated and maintained at mean temperature.

The medicinal treatment next demands our attention. Without careful attention to feeding and other matters we have alluded to, I need hardly say that drugs are comparatively useless.

The first indication, if need be, is to rid the stomach and bowels of any offending matter, whether food or mucous secretion. If the tongue is much coated and there be little vomiting, an emetic of zinc, copper, or ipecacuanha is most useful. If it be needful to direct attention more to the bowels than the stomach, an aperient of castor oil, rhubarb, or magnesia will be indicated. The sedative effect of small doses of castor oil cannot, I think, be overestimated. After having got rid of undigested food and mucus, the next indication is to treat the catarrhal condition by suitable drugs. In gastric catarrh I am in the habit of commencing with the well-tried remedy, calomel, in small doses during the first twenty-four or thirty-six hours, from $\frac{1}{4}$ to $\frac{1}{2}$ a grain, with a little sugar, given

every three or four hours till six powders have been given, will generally be found beneficial. If the drug alone is not successful it may be combined with minute doses of opium or pulv. comp. ipecac. c. opio. In the intestinal form of disorder I prefer the hyd. c. cretâ. with pulv. ipecac. c. opio. There can be no doubt these well-tried remedies have stood the test of time. I have tried to do without them, and always been impelled to fall back upon them. They must be given in small quantities, and generally not more than from four to six doses altogether. If improvement in the symptoms is not then manifest they should be stopped. After a few doses of the mercurial remedy, I am in the habit of giving an alkaline mixture with bismuth. The subnitrate combined with bicarbonate of soda made up with mucilage in an aromatic water or simple water with two or three drops of sp. of chloroform, is often useful. In cases where this does not agree, the liq. bismuthi may be tried, but is less useful. Sometimes a drop or two of tincture of opium with four or five grains of bicarbonate of soda in dill water will succeed when other remedies fail. Ipecacuanha in small doses alone or with an alkali is often of much service. After the tongue has begun to clean, the sedative antacid and astringent effects of zinc oxide are very striking. This is already a well-tried remedy in the diarrhoea of infants, but it has not been used, so far as I can learn, so often as it might be in the acuter stages of the disease, nor yet in sufficiently large doses. The oxide should be carefully mixed with mucilage and given in doses of from two to four grains along with four or five drops of succus belladonnæ to each dose. This seems to act very well in some cases. In old-standing cases of chronic diarrhoea, of which we are not at present treating, but I mention it in passing, the oxide may be given in grain doses with a few drops of tinc. nux vomica, and is one of the best remedies I know of, in this combination.

The next class of drugs I must allude to are those of an antiseptic character. The great tide of this class of remedies has invaded these diseases as well as most others, and I am bound to say that they are useful in many cases. Salicylic acid, benzoate of soda, and resorcin have all their advocates. In intestinal catarrh, as is well known, the secretions are loaded with micro-organisms, and there can be no doubt benefit results from such remedies. Of resorcin or salicylic acid two or three grains should be given every two hours. A few drops of the Liq. hydrarg. perchlor. given in a little glycerine and water often acts as a charm. It should be given every two hours. Salol is a remedy which promises to be of service in intestinal catarrh. It passes the stomach unaltered, and being acted on by the intestinal juices is said to have a good effect in allaying inflammatory action and stopping diarrhoea.

Intestinal Irrigation with warm water, to which is added from a quarter to half per cent. of sodium chloride, is warmly recommended.

by Baginsky, of Berlin, and is of undoubted service in intractable cases when other means have failed. In using irrigation the process should not be persisted in if straining is induced. Various astringent and sedative drugs have been used as irrigants with varying success.—*Edinburgh Medical Journal*, Sept. 1887, p. 222.

33.—CLINICAL LECTURE ON THE JAUNDICE OF INFANTS

By JOHN W. BYERS, M.A., M.D., Physician to the Belfast Hospital for Sick Children.

The circumstance that jaundice is not in itself a disease, but merely a symptom depending on a great variety of causes, presents the careful and scientific physician with problems of surpassing importance ; for until in any given case he can unravel the cause of the jaundice he must feel that both his prognosis and treatment may be entirely at fault. As you have seen at the Children's Hospital and at the Royal Hospital, jaundice may be met with at all periods of life. It is, however, to that form of jaundice which occurs among infants that I wish to-day to direct your attention, a subject about which your ordinary text-books give you but scanty information. My remarks will be based on the experience I have gained in this hospital and in private practice during the past six years. I propose to say a few words about the various varieties of infantile jaundice, and the line of treatment to be adopted in each. Let me first, however, draw your attention to a condition of matters met with in the new-born child to which, I think unfortunately, by some the term "icterus neonatorum" has been applied. On the second or third day after birth, on visiting your lying-in patient, you will sometimes be told in alarm or in wonder that "the baby has the jaundice," and in confirmation of this statement you will be asked to look at the yellow colour of its skin. If, however, you observe with care, you will note that the conjunctivæ of its eyes are white, and on inspecting the diapers you will see neither pipeclay motions nor stains of high or saffron-coloured urine ; in a word, there is no evidence of jaundice present except the apparent yellowness of the skin. Those of you who have taken out your midwifery cases, know that at birth the surface of the infant's body is covered with a white or yellow adhesive coating—the vernix caseosa—which is composed of sebaceous and epidermic cells and fat. If you have not already observed this circumstance, note carefully at the first opportunity you have the condition of a new-born infant's skin from which this vernix caseosa has just been washed off. You will see that it is of a rosy-red colour, and in a short time, if with your finger you press the skin so as to empty the small superficial bloodvessels, you will see a distinct trace of yellow colour, which gradually increases. This begins on the second or third day, lasts about a week, and is

generally gone about the tenth day. You will as a rule observe that this apparent yellowness is most marked just in those places where the redness has been greatest. Now there is one point in reference to this form of pseudo-jaundice which is worth noting. As you are aware, the usual plan is to tie the umbilical cord as soon as the child has breathed freely, but the experiments and observations of Budin and others have shown that if you delay ligaturing the funis until all pulsation has ceased, the child will receive a certain quantity of blood, which by early tying would be left in the placenta. Further, by adopting this method children are more vigorous and active. They lose less weight immediately after birth, and subsequently are said to increase in weight with greater rapidity than those children in whom early torsion of the cord has been practised. The advantage of the late ligature of the funis is very marked in premature children, as it has been ascertained that the mortality in their case with the adoption of this practice is only one-half what it is when the cord is tied early. During the past two years I have, in my obstetric practice, adopted the plan in all cases (except in a few where, owing to the mother's condition, it was necessary to expedite the delivery of the placenta) of waiting until all pulsations in the funis have ceased before putting on the ligature, having been convinced by the observations and experiments of the authors I have mentioned, as well as by the practice of the continental lying-in hospitals, that such a method is better for the child than tying the cord as soon as it cries or breathes freely. Since adopting this practice I have met with more of these cases of apparent jaundice, which is, however, in no way detrimental to the child, and which is probably due to changes in the circulation of the skin and gradual disintegration of the abundant blood cells. The fading of the rosy redness which comes on soon after birth in its gradual changes leaves behind it a yellow tinge, like that seen in a vanishing bruise.

We now come to the discussion of real jaundice in infants; and the cases I have seen in this hospital and in private practice are sharply divided into two classes. In the one, the jaundice, as a rule, is mild and the infants recover, while in the other group the jaundice becomes more intense until the fatal termination. I have notes of several cases where the discolouration of the skin, the yellow conjunctivæ, and the white motions with high-coloured urine have been present, this condition of matters, with varying intensity, lasting from about a week to ten or fourteen days. The children seemed to suffer little, and all recovered. Many of them were first-born children. Dr. Charles West teaches that exposure to cold or a vitiated atmosphere may be a cause of the disease, and in support of this he states that in the Rotunda Lying-in Hospital jaundice is rare, while in the Paris foundling hospitals nearly all suffer from it, the reason being that in the former hospital they

are properly cared for, while in the latter the air is bad and the children are exposed to cold. As to the exact causation of this mild form of jaundice, we are still in the greatest doubt, because fortunately the children, as a rule, recover; and consequently autopsies are rare. Different observers have given very diverse explanations. While Virchow thinks this form of icterus is due to a gastro-duodenal catarrh, Frank believed it is the prolonged retention of the meconium which is the cause. Cohnheim held that the bile secretion was increased rapidly after birth to such a degree that it could not be eliminated, while Frerichs taught that it was due to changes in the hepatic circulation. An explanation put forward by Birch-Hirschfeld is accepted by some as accounting for the jaundice. This observer has shown that the vessels in the notch of the liver, and also for some distance within that organ, are surrounded by a layer of fibrous tissue. This gets oedematous and becomes swollen, when, owing to a prolonged or difficult labour, there is interference with the hepatic circulation, and by its compression gives rise to obstructive jaundice. I mention these various theories, but do not think that any one will cover all the cases. There is a ready method by which you can tell whether the jaundice is real or apparent. If a piece of white linen fastened round the child's loins be coloured yellow, then you may be sure it is a case of true jaundice.

I will now ask you to consider the very important group of cases where the jaundice gradually deepens and the infants die; and the following cases are types of the various conditions which may give rise to fatal jaundice.

Case 1.—I show you to-day a small, shrivelled, miserable-looking infant three weeks old. You see it is intensely jaundiced; its eyes and skin are yellow, and in the upper half of its body note the presence of some purpuric spots. You also see blood oozing from its mouth. The umbilicus is normal. You see its diaper is stained a yellow hue. Its mother tells us that at birth it was healthy-looking, but at the beginning of the second week its skin and eyes “turned yellow,” its motions became white, and its water high coloured; and all these symptoms have gradually deepened. It is a full term child, but the mother has had a premature baby, and from what she tells us of her having had a sore throat, rash, and falling off of the hair, there is a clear specific history. We look upon the jaundice here (especially from the history) as being due to some form of syphilitic inflammation or growths compressing the bile-ducts (the peri-pylephlebitis of Schüppel), and our prognosis is of the worst kind. (This child died 25 days after birth.)

Case 2.—I will now give you the notes of a very interesting case of a child which I saw some years ago. When born it was noticed to be of a yellow hue, and this has gradually got more marked. The urine was jaundiced, and the mother said “there was some-

thing wrong with the way it passed its water." The motions were always white. The child was bottle fed and had not thriven and within the last two weeks before my visit it had passed blood-stained mucus by the bowel. It was an only child, and there was no specific history. There had never been any bleeding from the umbilicus. The child when I saw it was small, more like a month than a three months' baby, emaciated, and deeply jaundiced. There was no enlargement of the liver to be detected, nor of the hæmorrhoidal veins. The foreskin was retracted. No urethra was to be seen in the glans or body of the penis, but on its under surface, close to the scrotum, there were two small apertures, one on each side of the middle line. On attempting to pass a filiform bougie into one of these the child voided a quantity of deep saffron-coloured urine. There were no spots on the body or sores around the anus, and the child did not snuffle. The umbilicus was natural looking. The child died in two days after I saw it. Now, although most unfortunately no post-mortem examination was made, I have little doubt that the jaundice in this infant was due to some congenital stricture in the bile-ducts, from the following facts—(1) the progressively deepening jaundice; (2) the gradual emaciation; (3) the presence of an evident malformation (hypospadias); (4) the intestinal hemorrhage; (5) the absence of syphilitic history.

Case 3.—An infant, three weeks old, was seen by me in the out-patient room of this hospital at the beginning of the present session. The woman (its aunt) who brought the baby, said its mother had taken ill with a "shivering" three days after the birth of the child, and had been unwell ever since and "unable to give it drink." A week after birth the child first became yellow, and the colour had got worse, the aunt says, up to the time she came to the hospital. It passed blood per anum, and had been vomiting almost constantly for a week before I saw it. The child, which was very puny, was completely jaundiced. The tongue was dry, the abdomen swollen and painful, temperature 101° , and a mixture of blood and pus welled from the umbilicus. Subsequently I learned that the mother had been ill with puerperal fever, and at a later period I admitted her into my ward at the Royal Hospital, where some of you saw her, with pelvic cellulitis. The child died ten days after it was first brought to the hospital. In this case the jaundice was due to umbilical phlebitis, caused by the same poison, probably, as that which infected the mother.

Now these three cases are, as I have said, types of the conditions which I have met with as causing fatal jaundice in infants. 1. Syphilitic growths and inflammation. 2. Malformation of the bile-ducts. 3. Umbilical phlebitis. In reference to the second type, it is a curious but well-observed fact that this condition of matters (as pointed out long ago by Dr. Cheyne) is liable to appear

in successive children of the same family, an important factor in diagnosis. I am aware of a case where three successive children in one family have died of jaundice caused by malformation of the ducts. Further, bleeding from the umbilicus sometimes is noticed in these cases; and you will remember, I hope, that this umbilical hemorrhage is of bad prognostic import, as when it occurs the fatality is more rapid. I show you here a chromic-lithograph of a liver from a case of congenital malformation of the ducts. You see it is of a deep olive-green colour, and is in a cirrhotic condition. It is probable that the cirrhosis is secondary to the obliteration of the ducts, as Dr. Wickham Legg has shown that tying the bile-ducts of an animal will in time give rise to a somewhat similar condition of the liver. Dr. Legg thinks that this cirrhotic condition prevents the blood circulating through the liver, and in consequence it passes along the line of least resistance, from the left portal vein to the ductus venosus, and thence to the umbilicus, where the imperfectly healed vessels of the umbilicus yield to the increased arterial pressure, and hence oozing of blood takes place.

Let me say a word in conclusion as to treatment. In the simple form of true jaundice in infants you will see that the bowels are kept regular, and a mixture of a little soda and taraxacum juice will generally bring matters right. In malformation of the bile-ducts no treatment is of any use, while in those cases in which there is a specific history, small doses of grey powder should be tried, and the parents should be brought under a mercurial course, so that if there be any more children the virulence of the syphilitic poison may be destroyed or lessened. The prevention of umbilical phlebitis is best done by the employment of antiseptics in midwifery, this form of infantile jaundice being unknown in those lying-in hospitals where rigid antiseptic midwifery is practised.—*Lancet*, July 16, 1887, p. 102.

DISEASES OF THE URINARY ORGANS.

34.—ON THE TREATMENT OF URÆMIA.

By JAMES ANDREW, M.D., F.R.C.P., Physician to
St. Bartholomew's Hospital, London.

The cases of uræmia which cause least doubt and anxiety to the practitioner are those which occur early in acute forms of renal disease, in persons previously healthy and not past middle life. Here purgatives and diaphoretics are to be used boldly, and with a good prospect of a successful issue to the case if there is not complete suppression of urine. With regard to the employment of diuretics, considerable difference both in theory and practice seems to prevail. And this is in great part due to the vague, indefinite meaning attached to the word "diuretic." If it simply means

something which increases the excretion of urine, by all means let it be given if it do so; and in the case we are considering elaterium, pilocarpine, digitalis, antimony, vapour-baths, and even general bleeding will be found to be excellent diuretics. But if it is used in the more restricted sense of some substance which, by its direct action on the secreting structures of the kidney, stimulates them to increased activity, then, granted for argument's sake that such a substance exists, it ought not to be given. The blood is already loaded with, and the kidneys exposed to the irritating action of, the most powerful diuretics, viz., the substances which it is their special function to deal with and to excrete. In fact, the suppression of urine is due in no small part to this *over-stimulation*, and to add to this can scarcely be wise, or even scientific. The only possible exception I would make to this is the addition of a small quantity of some salt of potassium or of lithium to the diaphoretic or purgative dose in order that urates may pass through the kidney in a more soluble form than that of sodium urate. If the skin is dry and imperspirable, a hot-air bath is of the greatest service, and if it is important to produce more speedy and profuse sweating, pilocarpine should be injected subcutaneously. Marked relief to the urgency of the symptoms and an increased flow of urine frequently follow the use of dry cupping-glasses over the loins; if the patient is young and vigorous, two or three ounces of blood may also be taken with advantage. My practice is to apply three cups on each side, viz., one over the last rib, with one above and one below. There is no difficulty in their application as the patient lies on either side; it is not necessary that he should be either propped up or turned over on his face. As soon as the fit has come to an end, half-ounce doses of the liquor ammonii acetatis should be given four to five times a day, and to this, if the pulse be unduly firm, \mathfrak{m} xv-xx of antimonial wine should be added. But the fits are in themselves highly dangerous, and, indeed, frequently prove fatal; it is, therefore, of great importance to prevent their recurrence, and gain time for eliminant treatment to relieve the congestion of the kidneys. For this purpose no drug is equal to chloral hydrate, and with proper care there is no danger in its use. Ten grains may be given for the first dose, but after that never more than five grains.

In cases when a large quantity is required, the frequency, not the amount of the single doses, is to be increased. Large doses of twenty or thirty grains or more must not be used; no doubt they are often strikingly efficacious, but the risk attending them is very great. The five-grain doses may be given every hour or even every half-hour, provided that the patient takes them readily without requiring to be roused to do so. If the nervous attacks recur, the treatment of the later ones must be less active, copious discharges from the skin and intestines will be less easily borne, and

may even do harm by contributing to a rapidly developing anæmia. Instead of antimony or digitalis, a few minims of tinctura nucis vomicæ should be added to the diaphoretic draught. When the attacks have ceased and the urine is again excreted copiously, the treatment need not differ from that of an ordinary case in which no uræmic accidents have taken place. In acute cases the occurrence of these accidents, if they do not then and there prove fatal, have no unfavourable effect upon the prognosis; indeed, patients who have suffered from them often recover at last as rapidly and completely as those who have not. In cases at the other end of the series, viz., those in which, either from the length of illness or from its very nature (e.g., amyloid degeneration), there is marked anæmia, especially if there be also much dropsy and the urine is still passed in considerable quantity, the principles of treatment are sufficiently clear, although too often but little can be hoped for from their most skilful application. Dry cupping over the loins will be of service here also, with the careful use of small doses of chloral hydrate; but purgatives must be given rather to relieve constipation than to produce any abundant flow from the mucous membrane, and even diaphoretics ought to be given tentatively and cautiously. Whenever the patient may seem to be for the time comparatively safe from any sudden accident, the utmost advantage must be taken of the opportunity to improve his nutrition by good food containing a fair proportion of nitrogen, and four or five ounces of wine or an ounce of whisky or of rum in milk will be a valuable addition to his diet. Gentle exercise in the open air, walking or driving, if it is possible for him to do so without serious risk of catching cold, ought also to be looked upon as an essential part of his treatment, one main object of which is to secure the perfect assimilation of suitable food; for this a sufficient supply of pure air to the lungs and gentle stimulation of the general circulation are as necessary as the food itself.

To recapitulate briefly the points of prime importance in the treatment of uræmia. Our success will depend upon the accuracy with which we are able to determine the share taken in the production of the symptoms by

- (1) Fouling of the blood consequent on impaired activity of the kidneys.
- (2) Some form of anæmia not necessarily complicated by any actual impurity of the blood.
- (3) Imperfect nutrition and degeneration of all organs, especially of the nervous centres.

The supposition that vigorous treatment by purgatives and diaphoretics is always beneficial in uræmia leads to most disastrous results, for the cases to which it may be unhesitatingly applied probably constitute but a small minority of the whole.—*Practitioner*, July, 1887, p. 5.

35.—ON THE TREATMENT OF DIABETES MELLITUS BY LITHIUM CARBONATE AND SODIUM ARSENIATE.

By AUSTIN FLINT, M.D., New York.

[Dr. Austin Flint publishes, with seven other cases treated by ordinary measures, three cases in which the lithium carbonate and sodium arseniate dissolved in carbonic acid water, recommended by Dr. Martineau, of Paris, was used. The following propositions are appended to the paper.]

1. In the three severe cases in which I have used the solution of lithium carbonate and sodium arseniate in carbonic acid water, no very marked effects have been observed in the few weeks during which the remedy has been employed; but the treatment seems to me to be worthy of more extended trial, and it may be useful in mitigating the severity of a strict anti-diabetic diet.

2. The so-called specifics for diabetes have little, if any, effect. An exception, however, may be made in favour of the arsenite of bromine, which has sometimes seemed to me to control, to a slight extent, the thirst, polyuria, and discharge of sugar.

3. The main reliance in treatment is to be placed upon an anti-diabetic diet. This has fallen somewhat into disrepute, because it is seldom efficiently carried out. In no single instance, out of ninety-nine recorded cases, have I found that the anti-diabetic diet had been enforced.

4. Milk should be absolutely interdicted. Its influence over the progress of the disease is prompt, powerful, and most injurious.

5. There are certain cases in which dietetic treatment promptly arrests the disease and keeps it under control. There are other cases in which treatment seems to be of little avail, except in possibly retarding the progress toward a fatal result. Of the ten cases reported, and now under observation, seven are amenable to treatment, and three are obstinate.

6. A confirmed diabetic may be cured, in the sense that all symptoms will disappear; but the disease is liable to return at any time under an unrestricted diet. Still, moderate care in diet will often secure immunity.

7. A patient who has once had diabetes should have his urine examined every few weeks. The glycosuria always precedes the general symptoms of the disease, and these general symptoms can generally be forestalled by proper treatment employed as soon as sugar makes its appearance in the urine.

8. As the disease returns, either from imprudences in diet or from other causes, the successive recurrences present greater and greater difficulties in the way of treatment.—*Medical News*, July 9, 1887, p. 32.

SURGERY.

AMPUTATIONS, FRACTURES, DISLOCATIONS, AND DISEASES
OF THE BONES, JOINTS, ETC.

36.—ON THE SIGNS AND TREATMENT OF LATERAL CURVATURE OF THE LUMBAR SPINE.—(1ST PAPER.)

By RICHARD BARWELL, F.R.C.S., Senior Surgeon to the Charing
Cross Hospital, London.

The earliest signs of curvature are very subtle, only noticeable to the trained eye, and even by many of the profession not much accustomed to this special examination are—I must be pardoned for saying it—little understood. It will, therefore, be well to give, in the shortest words I can command, a description of these earliest symptoms. Firstly, of lumbar curvature, convex—let us assume to the right. The patient is placed with the back directly opposite a good light, cross shadows and reflections being avoided; the hair must be disposed on the head; the dress removed, only a chemise and perhaps an under-vest retained, and these dropped to a level with the great trochanters; all embarrassment from tendency to slip lower, and therefore wringing of the body, must be avoided by suitable arrangement. The surgeon, sitting behind her, feels that the knees are quite straight, the feet close together; then, placing his forefingers on the crest of the ilium at the side outline, notes if one be higher than the other. He will greatly aid this observation if he arrange that the horizontal line of a dado or some piece of furniture crosses, at a greater distance from his eye, the figure at this level. Having settled one way or the other this point, he may recede a little, the better to take in the whole contour of the figure from the nape downwards, and will see that it is different on each side; on the convex side (in the case postulated the right) the side outline just above the ilium is full and rounded, while on the concave side the constriction of the waist is marked by a deeper excavation; the angle between the thoracic part and the iliac part of the body is on the right very obtuse, on the left much more acute; if the arms can be brought to hang evenly and perpendicularly from the body, the triangular interval between them and the trunk is larger on the left than on the right side. Taken altogether, these changes in the side outline give to the whole figure the look as though the upper part did not stand straight over the lower part of the figure, but had been shifted over to the right. If now the surgeon direct his attention no longer to the outline of the figure, but to the surface, he will see that the sharper

excavation on the left side of the waist marks itself also by a deeper indentation on the dorsal surface of the bone (see Fig. 5), and that it lies higher on the figure than the corresponding depression on the left, supposing any still to remain, as very early in the case there often does. Feeling for the line of the spinous processes, the surgeon may thus early find them still quite straight, because their rotation to the concave side will have compensated for their lateral deviation; but on feeling the parts on each side of that line

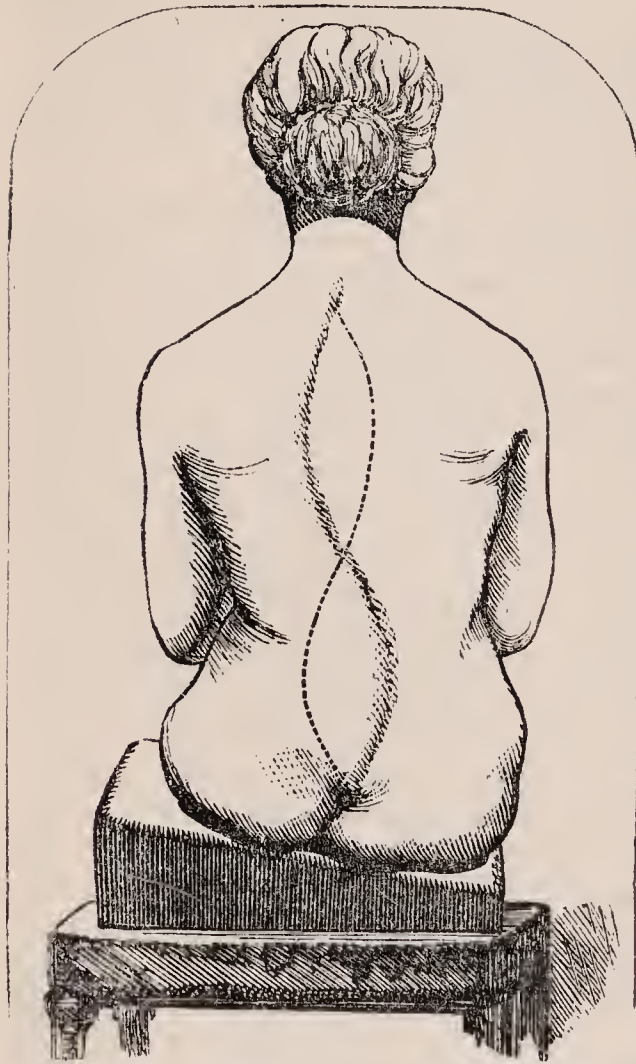


FIG. 4.—The dotted line represents the morbid curve, the shaded line that which the articular pelvic obliquity tends to produce.

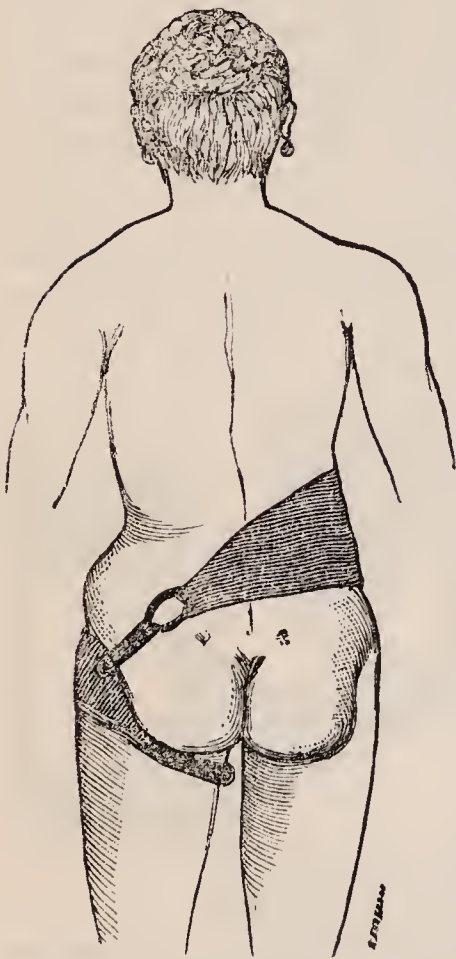
makes very slight demands upon their time or comfort, but which after a little steady perseverance greatly modifies the curve, which in a certain period, commensurate with the severity of the case, will cure it; and which can have no injurious effect upon the health.

The particulars of this treatment are as follows. Firstly, let me refer to my previous paper (*vide Lancet*, June 25th). Fig. 1 represents a case of permanent pelvic obliquity from shortness of one

he will find the muscles much harder on the convex than on the concave side; not, I believe, from any more powerful contraction, but because they are more supported, pushed backward, if one will, by the transverse processes. When these changes of form are observed, there can or should be no doubt as to the existence of a curve primarily lumbar, and treatment should be at once begun; but I am very far from saying that henceforth the child's life is to be devoted to persistent recumbency, or that she is to sacrifice her health by carrying on her back a heavy thing called a "spinal support"—falsely so-called, because, whatever else it may support, it cannot so act on a deviated spine. On the contrary, I recommend, more especially for quite young patients, a treatment which

lower limb; the spine is necessarily curved to the left. Fig. 2, from the same patient, shows how a block of commensurate thickness placed under the short limb corrects the pelvic obliquity, and therefore also the spinal curve: this latter correction was not, of course, obtained at once, but is the fruit of the plan carried on for some weeks. The deduction is obvious—viz., in every case in which by the means above described pelvic obliquity is detectable, to heighten the lower side of the pelvis until it is on a level, or in certain cases above the level, of the other side. But we need not stop there, for if pelvic obliquity can produce, as has just been proved, a lumbar curve, therefore an already existing curve can be counteracted by making the pelvis oblique—higher, that is to say, on the convex side. In early and slight cases the spine assumes, while this artificial pelvic obliquity is maintained, a perfectly

FIG. 5.



straight line, or the curve may be actually reversed. Older and severer cases cannot be thus immediately straightened, but they are very considerably corrected, and that correction is week by week confirmed and increased. Thus, I order the heel of the boot on the convex side to be somewhat heightened, or rather arrange that the heels of the boots or shoes be broad and flat—really under the foot-heel, not pointed and in the middle of the foot, as is the present fashion; and I direct that one thickness of leather be taken from that on the concave, and that one be added to that on the convex side. Moreover, I order a hollow wedge of wood, made of two boards screwed together at one end separated at the other by a cross-piece. This wedge may be covered with plush or worsted work. It is to be placed on the seat of a chair, and the patient sits on it with the higher side towards the convexity of the spine (Fig. 4), thus by degrees forcing the column to assume a

straight line or a contrary curve. This cannot, however, be used in the first part of the case for very long at a time, but rather for several short periods during the day. Hence it is convenient to let the patient sit on it during meals. For quite young subjects with commencing curves, these methods often suffice.

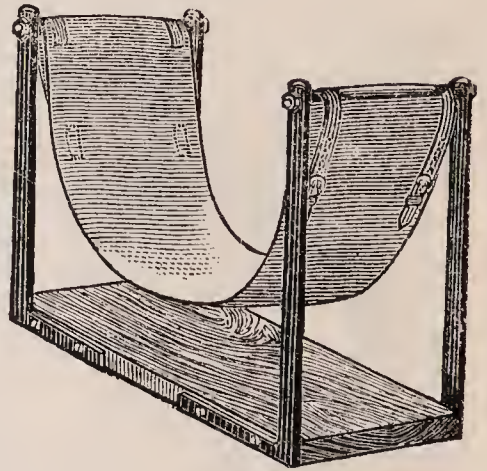
But in more developed cases some power which shall draw the

convexity over to the concave side is required, and for this purpose I employ a device which I have named the *loin bandage*. It is in each instance made of coutil or moleskin, from a pattern which I myself cut to the patient's figure. The patient takes it off and puts it on by clasps (except the leg strap), its tension and balance being regulated by buckles provided with a simple mechanism that ensures to me their control. Elasticity is obtained by inserting, back and front, india-rubber rings an inch and a half in diameter, made of cord fully a quarter of an inch thick. (See Fig. 5.) This is not worn next the skin, as represented in the figure, but outside a combination garment, or, if drawers and chemise be separate, a slit in the side-seam of the latter allows the loin part to lie outside. I need only add that the hip-pad should lie in the depression behind the trochanter, and in putting it on the back ring should be strained tighter than the front one. When the balance is arranged aright, the whole sits very comfortably, and does not show under the garments. A very small percentage of patients feel for a day or two the strap round the leg; they very soon lose the sensation, for there is really no tension on it, the force of the loin part acting at an acute angle with the direction of the leg strap. Rarely is any other device than those above-named required, but in really severe cases two others may be added.

The *lateral swing* is a mechanism that I used for some years before giving any account of it. (Fig. 6.) Dr. Busch and I seem to have published it simultaneously.

FIG. 6.

I chiefly use it in dorsal curvature, but also occasionally in lumbar. It is fourteen inches long by six broad and ten high; it should, therefore, be kept at the bedside, and when the patient retires for the night she lies in this for about twenty minutes, so that the convex side of the spine is slung up off the bed by the broad webbing, and must curve in the contrary direction. Again, in the morning, quite early, the maid or nurse can hand this into the bed, and the patient can lie and take an additional sleep in it.



The *loop girth* is simply a piece of broad webbing about four feet long, fastened by each end to a staple in the wall a little above the level of the patient's waist; she stands with the concave side towards the wall; the convex side is caught in the loop, the foot on that side being supported by a block from one to two inches high. When the girth is found to be properly secure, she places her clasped hands on her head and slowly bends over; then rises again and repeats this manœuvre several times, gradually increasing

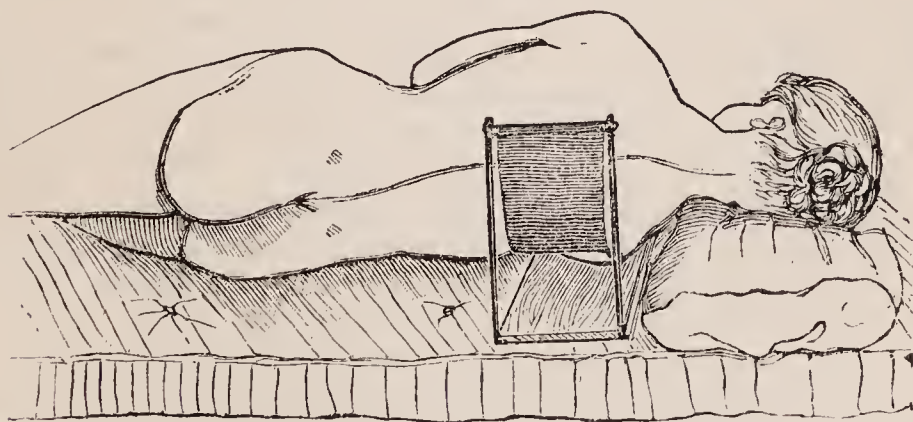
the number, as also the rapidity, of the movements, as custom renders them easier. Very few, if any, lumbar curves resist these combined remedies.—*Lancet*, July 9, 1887, p. 59.

37.—FURTHER OBSERVATIONS ON THE TREATMENT OF LATERAL CURVATURE.—(2ND PAPER.)

By RICHD. BARWELL, F.R.C.S., Surgeon to Charing-Cross Hospital.

The treatment which I advocate is one that *leads* the spine aright rather than *forces* it into this or that attitude. It consists in one part of substituting for the muscular acts which produce deformity such as tend to restore symmetry, and in another part of counter-acting by elastic and yielding power the lateral deviation as well as the morbid twist. The former devices, which I term “adjuvants,” therefore naturally fall into two classes—those that act against the curve, and those that are directed against rotation. For an account of the first class I must refer to what has been said in my previous papers concerning pelvic obliquity and its influence on the spine—[vide Article 36; also *Lancet*, June 25th, Figs. 1, 2, and 3], which show that its effect does not stop at the loins, but is continued up into the dorsal region. Advantage may therefore be taken of an artificial obliquity by means of the *sloping seat* (Fig. 4), and in some cases by some additional thickness to the heel of the left boot. If the patient ride, she must do so on the wrong side of the horse—i.e., with the left leg in the pommel.* The *loop girth* is also a valuable appliance for those cases in which the lumbar curve is somewhat strongly marked. The *lateral swing* (see Fig. 6) is directed against both deviation and rotation; its method of use for lumbar curvature has been already described [vide previous article.] For dorsal curve it must be placed somewhat higher on the figure, as in Fig. 8. The patient uses it, of course in her

FIG. 8.



customary nightdress, for about twenty minutes night and morning at the commencement of treatment, the period being gradually

* Throughout this description of treatment a curvature, convex to the right in the dorsal, to the left in the lumbar region, is assumed.

increased. She must lie in it, not completely on the right side, but a little turned over on the back, by which means the weight of the body acts both against lateral deviation and rotation.

The adjuvants aimed at the counteraction of rotation require some explanation. One of the agents, if not the chief one in turning the upper on the lower part of the trunk, is the serratus magnus, which may be regarded in conjunction with the rhomboids as a fleshy mass inserted into the nine upper ribs, whose mode of attachment to the spine indicates the lever-like use to which the muscle puts them in turning each vertebra; in this point of view the posterior costa of the scapula is to be regarded as a mere intersection. Thus it is evident that any position of shoulder which decreases the distance between that edge of bone and the insertion of the serratus diminishes on that side the backward pull of the muscle on the ribs, while postures which augment that distance add to that action on those bones. As the serratus is a powerful respiratory muscle, and also is one of those that support the scapula in its position and upholds a great part of the weight of the shoulder, we can take advantage of these functions, thus: the patient is to acquire the habit of keeping the left forearm behind the waist—a not ungraceful posture, which may be assumed at any time and in any place. A more potent aid, but which can be only periodically practised, is what I have called the *respiratory exercise*. In each of two walls facing each other a staple is fixed, from which cords, rendered elastic by the intercalation of accumulators, pass to the neighbourhood of a chair midway between the walls. On the chair is placed the wedge-shaped cushion, on which the patient sits, high side to left. She then crosses her right arm in front, her left arm behind the body, grasping in each hand the cord, which must be at a tension of at least 2 lb., and which is provided with a suitable handle. Thus placed, she takes long, slow, and deep breaths; about twelve is sufficient in the beginning, afterwards the number may be considerably increased.* Another device, valuable for slight rotation by itself, or as an addition to the other means for severer cases, is to weight the left arm. This is done by a strip of lead one-eighth of an inch thick, three-quarters of an inch broad, and ten or eleven inches long, weighing about four ounces; it is covered with thin mackintosh and a silk ribbon somewhat longer than the metal, so that it may be tied on the arm about the insertion of the deltoid. I am often asked if my patient is to lie several hours a day on the back. This is the remains of an antiquated mistake; and many a girl has been condemned to very serious loss of health by continuous and long-continued recumbency. Lying on the back, although in that attitude the spine is of course straighter than when it supports the weight of the body, has no

* I needly hardly point out how in this position the action of the serratus on the ribs is minimised on the right and augmented on the left side.

curative effect whatever; if too much practised it only weakens the muscles, so that when the patient gets erect the spine only yields more to the superincumbent load. Therefore my answer to the question is to let her lie down as soon as she feels fatigued, and after any exercise, even though unconscious of fatigue, for about half an hour. Quite young people, healthy and strong save for the commencing curve, often say they never feel the back tired; nevertheless, it is well to relieve the erector spinæ from work for a considerable part of the day—for instance, while reading or learning tasks by rote—occupations that harmonise badly with the supine position. I tell them, therefore, to do all this sort of work while lying on the front of the body; and to this I add that the right arm is to lie by the side or under the chest, while the left elbow is placed on the couch and the head reposes on the left hand, thus again throwing work on the serratus of that side. Some complain that lying in this way caused pain in the loins, because this part is hyper-extended; that may be entirely obviated by putting a rather thick pillow under the body, about the level of the umbilicus. It must be understood that these aids are not all used simultaneously in any one case, nor in many are they all used throughout its management; the influence of nearly all of them is at any given moment slight, but the cumulative effect of persistent use is very considerable.

More important, probably, are certain mechanisms to be explained immediately. I have already stated that “although in all cases of scoliosis the vertebra which has deviated most is also that which is most rotated; yet curvature and rotation do not in different cases bear the same proportion to each other.” Hence a very important difference in the direction of the power to be applied to the spine. Let us first suppose a case in which lateral deviation is the chief factor, the patient standing upright with her back to the surgeon. Most certainly, especially if not in the frequent habit of making these examinations, he will put his hands at the patient’s sides opposite the chief point of dorsal and of lumbar convexity, and then, by pressing them in opposite directions, will endeavour to find how much force is required to straighten the spine, which he will succeed partially or entirely in doing. The bandage called *dorso-lumbar* effects permanently what those hands do temporarily—pressing, that is to say, each convexity towards the middle (straight) line. (See Figs. 9 and 10.) It is constructed by adding to the loin bandage already described a dorsal piece made of the same material; its shape is shown in the figure. The two straps provided with rings that pass across the body, back and front, from the lower corners of the dorsal piece, are the active forces; the little strap higher up, shown in lighter colour, is inch-wide elastic webbing (haberdasher’s flat elastic); it merely guarantees the upper part of the dorsal piece from slipping. The power of this appliance

acts in the direction of the radii of the curves, that which has the most mechanical advantage; yet being elastic, it in no way hinders healthy exercise, is by no means uncomfortable, but the reverse, and can be worn imperceptibly under the patient's daily dress.

FIG. 9.

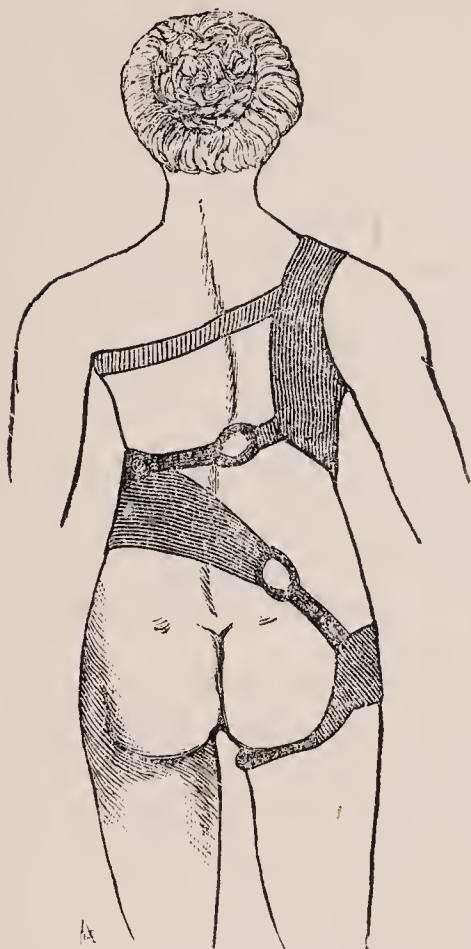
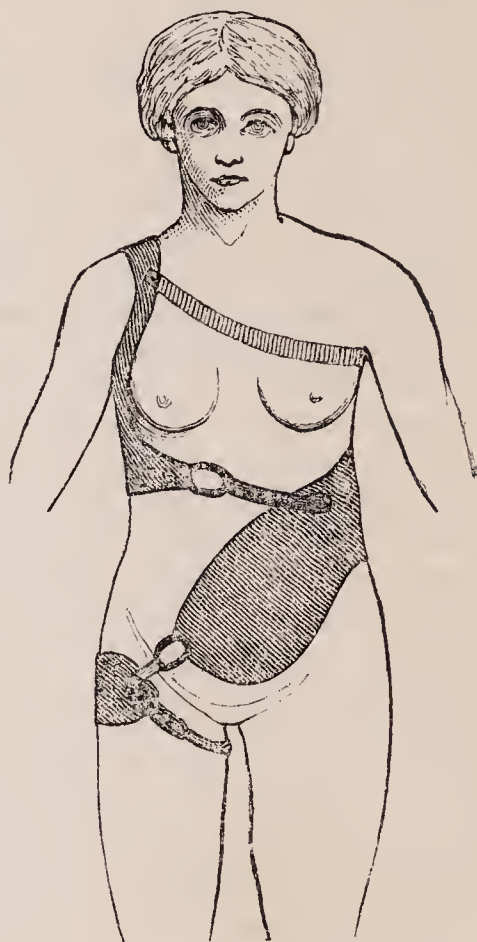


FIG. 10.



The *rotation bandage*, which at first glance looks almost identical, has a very different action, and is to be employed when rotation is strongly marked. When both deformations are pretty severe, it is better to begin with that just described and at the proper time, difficult to define in writing, substituting the rotation belt. The alteration can be carried out by the bandagist in a couple of hours, for it has the same shaped loin and shoulder piece; but the straps, i.e., the forces—act differently. The only point of connexion between the loin and dorsal part is the strap running across the front of the body (Fig. 12), the “front cross strap.” From the back, upper, and lower corners of the dorsal piece a webbing loop encircles the left upper part of the chest and shoulder; it is, of course, rendered elastic, and is provided with means of adjustment. In putting it on, when the dorsal piece is in place, the loop is first arranged with a proper degree of tension, and then, also with appropriate tenseness, the front cross strap is adjusted. As this is

done the upper part of the figure will be seen to turn (see Figs. 11 and 12) and to respond to every little additional tension of the front cross strap by an increased untwisting of the spine. Moreover the rings, both of the front cross strap and of the loop, play with every inspiration, thus, in a way that is easily understood, but too long to explain, every breath is a little step towards rectification of rotation. I devised this form of belt about two years and a half ago, and find that many cases such as previously I could only benefit are quite amenable to this treatment.

FIG. 11.

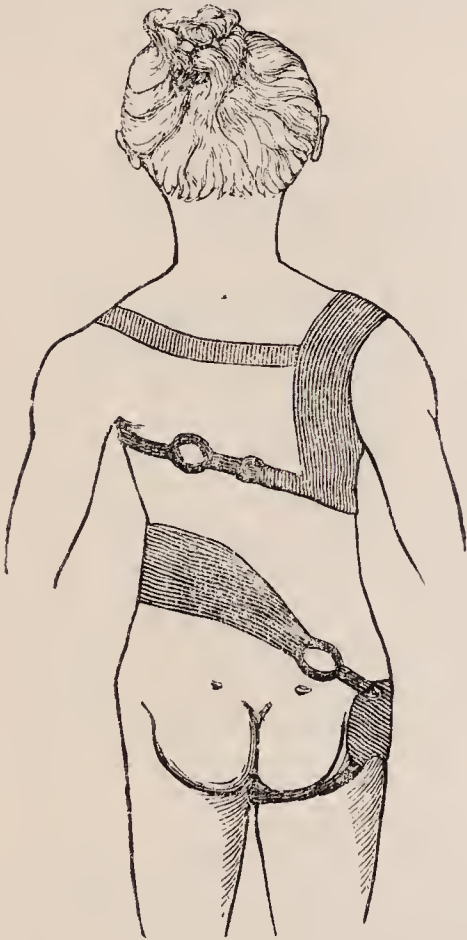
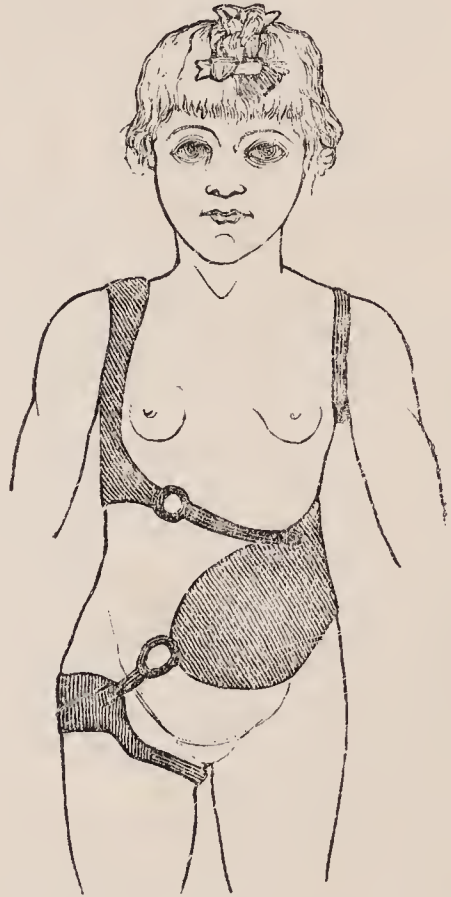


FIG. 12.



The prognosis of spinal curvature depends partly on the age of the patient, partly on its severity, and partly on its cause. Thus, scoliosis from severe rickets or from solidification of one lung is not to be cured—merely benefited. Lumbar curvature, arising from inequality of growth in a lower limb (pelvic obliquity), not the result of disease (*morbus coxæ*, infantile paralysis, &c.), is quite curable; indeed, if taken early, the management is preventive rather than curative. Such inequality nearly always corrects itself at due age, the limb which grew quickest ceasing to grow first; we have only to prevent the resulting lateral deviation becoming fixed. There is a certain senile dorsal curvature which is incurable; it is connected with a peculiar atrophy of the bones,

and is not the subject of my paper. All other forms not depending on lung disease are curable in the first and second stage, and may be greatly benefited, even in the first part of the third, provided the patient is not too old—say over thirty. The treatment and alleviation of severe curves in persons somewhat advanced in years cannot be here described.

[Mr. Barwell's appliances were made by Schramm, 6, Prince's St., Cavendish Square. The bandages are each one made from a pattern cut accurately on the patient's figure—fitted, and the direction of force regulated before finishing—then completed and applied, the patient being taught its management. (These particulars are more or less described in the foregoing article, page 228.)]—*Lancet*, Aug. 13, 1887, p. 301.

38.—PSOAS ABSCESS: WHEN AND HOW TO EVACUATE IT.

By EDMUND OWEN, M.B., F.R.C.S., Surgeon to St. Mary's Hospital, and to Great Ormond-st. Hospital for Sick Children, London.

In the surgery of childhood there is probably no branch of practice which has derived such beneficial influence from the principles of antiseptic surgery as the treatment of psoas abscess.

So far as my experience serves, twenty years or so ago, most cases of psoas abscess went wrong under active treatment, and surgeons were shy of interfering with them; dealing with them in a half-hearted and apprehensive way, they dreaded the almost inevitable hectic fever and gradual and fatal exhaustion. At that time, if the surgeon could do so, he preferred leaving a psoas abscess alone; but if the collection of matter were bulging to such an extent as to cause a reddening and thinning of the skin, if, in short, Nature were forcing his hand, he would perhaps thrust into the abscess a cannula and trocar, or partially evacuate it by a valvular opening.

One of the points on which I would specially ask for an expression of opinion by modern surgeons is whether psoas abscess does often undergo spontaneous cure. In my own experience the happy contingency has been so rare that I do not consider it as within the range of practical therapeutics. In many years of out-patient practice at a general and at a children's hospital, I have met with only one such case. My invariable experience—with that one exception—is that when in connection with a stiffened spine, an ovoid or fusiform tumour can be detected ascending in the depths of the iliac fossa, it is only a question of time as to when its purulent contents reach the surface. For their removal aspiration is of no real value. The tubular needle is quickly choked, and flakes of fibrin, shreds of ruined intervertebral discs, and fragmentary sequestra of the vertebræ can never be removed by it. The abscess quickly fills again, and within a few days of

making the attempt sero-purulent fluid leaks through the puncture, and unless thorough evacuation be at once performed, the abscess runs great risk of becoming septic. Irresolute attack of any other kind gives an equally unsatisfactory result. All this being admitted, there is no alternative for the practical surgeon but freely to open and drain the abscess.

My contention is that the abscess should be attacked as soon as treatment has brought the patient into the best possible condition for the ordeal. There should be no useless temporising. Why delay operating until the skin has become thin and red? For during this time the pus may be hollowing out for itself a wandering chasm which extends from the diaphragm above to Scarpa's triangle below, and may be insinuating itself beneath the iliac fascia or amongst the planes of the abdominal muscles. Surely, the smaller the abscess the less serious the inevitable operation, and the more amenable the cavity to successful treatment.

The method of evacuating psoas abscess, which I have adopted in a large number of cases, and which I recommend with confidence, is by a free anterior as well as posterior opening and by then washing and draining the cavity right through. The first opening I make close above the outer end of Poupart's ligament, using the scalpel until about an inch of the length of the fibres of the aponeurosis of the external oblique has been exposed. I then scratch through the fleshy attachment of the internal oblique and transversalis, and, keeping well below the level of the peritoneum, thrust the director into the swelling. Pus escapes, and the opening is enlarged by the dressing forceps and the finger. A stiff probe is then passed through the abscess cavity and made to project beneath the skin on the outer side of the erector spinæ. With this as a guide, a counter-opening is made in the loin. The large cavity is then flushed perfectly clean with a warm antiseptic solution, and a drainage-tube of the size of a penholder is laid through the chasm for a few days, being afterwards replaced by a silk thread. The parts are liberally covered with bulky pads of wood-wool and finely picked oakum in gauze bags; these are kept in position by a towel arranged as a binder, which, for the sake of compression, is tightly drawn and fixed with safety pins. Next day the cavity is again washed out, under chloroform, if necessary, the wounds being dressed as before. After this, the less it is interfered with the better; if the temperature do not rise, and the discharge do not soak through, the dressings may be left for three or four days, or longer. From the first day the discharge becomes thin and watery; suppuration in the ordinary sense of the word is at an end, and the cavity steadily contracts into a narrow passage.

If the abscess be so small that the surgeon does not feel inclined to attack it from the front, he may readily work down on to it above the iliac crest, on the outer side of the erector spinæ. The

scalpel is needed only for the skin incision, the rest of the operation being performed with equal ease and safety by the use of a steel director and the ring dressing forceps—at any rate in children.

Of the evacuation of unilateral psoas abscess, after the manner recorded, I have had a large number of examples; and it so happens that we have lately had under treatment in the ward, at the same time, three cases of double psoas abscess.

It is impractical to look forward to the spontaneous absorption of a psoas abscess; sooner or later it must be evacuated by Nature or art. In this matter art has the advantage, as by her aid the cavity can be at once emptied, cleansed and drained. The earlier the abscess is opened the better; for delay may entail the extravasation of pus, and the formation of a needlessly large and intractable cavity. The abscess should be opened and irrigated from the front and drained through a counter-opening in the loin. Washings and drainage should be thorough; for a small abscess the single opening at the back may suffice.

Warm iodine-water (decolourised) is the most suitable fluid for irrigation; the sublimate solution (1 in 1,000) is dangerous, at any rate in a large or double psoas abscess in childhood. The most convenient dressings are bulky pads of wood-wool and gauze-bags of finely-picked oakum; they should be fixed under a towel tightly pinned as a binder. Pus may rapidly collect on the opposite side of the spine, after a single abscess on the one side has been evacuated: therefore, if the temperature rise and remain high after the evacuation of a unilateral abscess, the formation of a second abscess should be watched for, and it should be opened as soon as it is detected; thus convalescence may be at once established.

Bilateral abscesses should be attacked simultaneously; they are likely to be in intercommunication, and the area of suppuration cannot be kept aseptic unless both sides are washed and drained.—*British Medical Journal*, April 23, 1887, p. 869.

39.—ON EXCISION OF THE KNEE-JOINT.

By W. MITCHELL BANKS, F.R.C.S., Surg. to the Royal Infirmary, and Professor of Anatomy, University College, Liverpool.

The first point is to obtain a general idea as to when, in the course of knee-joint disease, we are to excise. With hospital patients I think there are three main elements to be taken into consideration: amount of suppuration, lapse of time, and inability to work. Excessive suppuration or numerous dribbling sinuses infallibly indicate great destruction inside the joint, and imperatively call for operation. As regards lapse of time, if a joint at the end of two or three years has not recovered under well-conducted treatment, then it is questionable if it will ever get better

at all, while it is almost absolutely certain that it will be a stiff one, and that consequently the patient will be as well off with a successful excision as with an ordinary knee. Lastly, inability to work is a great point with the poor. I confess frankly that I have, during the past few years, very much altered my opinions as to the length of time which it takes before a patient is fit to work upon an excised knee-joint. I think, now, that, as a rule, after a successful excision a patient should be fit for work in from four to eight months.

What are the most favourable cases for excision? To my mind they are certainly those of chronic synovial thickening—pulpy gelatinous disease—where suppuration has taken place, where the ligaments are softened or even destroyed, and where abscesses have crept among the soft parts. Such cases undoubtedly do recover occasionally under rest and treatment, but very generally in poor people they do so with such an amount of backward displacement of the tibia as makes the limb rather a poor one. The worst cases are undoubtedly those of tubercular disease arising in the cancellous tissue of the ends of the tibia or femur, and implicating the joint secondarily. Putting it in a general way, the less disease there is in the bone, and by consequence the less bone we have to remove, and the sounder the cut surfaces we get, so much more successful is the operation likely to be. As for soft tissues, they have great powers of recovery, and we know much better now-a-days how to manage them than we formerly did.

A very important question is the age of the patient. Young children have such a wonderful power of recovery from joint disease that, if we can only catch the mischief in its early stage, we ought certainly with our present appliances to make the most determined efforts to avoid operation. The power which we now possess of being able, with the aid of Thomas's knee-splint, to send a child out to ramble the lanes—or even to play in the gutter—is one of the most remarkable and useful advances in surgery with which I am acquainted. Patients between fifteen and five-and-twenty undoubtedly do not possess the same recuperative power. The articulation recovers up to a certain point. The patient goes about his work, and remains well for a while, only to suffer from a relapse, and this keeps constantly being repeated until the patient is thoroughly tired of the whole thing. Now, these to my mind are the legitimate subjects for excision. If, therefore, reasonable trials of treatment have failed, I have no hesitation in proposing excision to such persons holding out the strong prospect of a leg only slightly shorter than natural, and as useful as the stiff joint which they could only hope for even in the event of a cure. Coming now to persons above five-and-twenty or thirty years of age, we fortunately find that in them joint diseases become wonderfully less frequent. But when they do arise, they are very much more for-

midable. Furthermore, middle-aged people do not bear operations well, which are tedious and troublesome to do and to manage subsequently, and, as a result, excision of the knee is a decidedly risky undertaking with them. Amputation, on the contrary, by relieving them at once from pain and annoyance is very successful. So that, to a man, say, of forty, I would counsel amputation as by far the safest and wisest course.

With regard to the actual details of the operation, we may note such points as seem to conduce to its success. It may be taken for granted that the best form of incision is that which gives the freest access to the joints, and permits of the most complete removal of all diseased synovial membrane and granulative tissue. Consequently, the attempts to remove the joint by lateral incisions are the worst that could be devised. I have tried several incisions, including the semicircular above the joint, but I do not think that any better can be found than the ordinary semicircular incision below the patella. It gives the best access to the interior of the articulation, and affords the readiest means of drainage. At one time there was much discussion as to whether the patella should be retained or not. It seems pretty well admitted that it is far better away. It cannot in any way add to the strength of the limb after the operation, because that entirely depends upon the completeness of the bony union between the tibia and the femur, and, if that be thorough, there is no need for further support. The truth is that, when retained, the patella only produces a useless and unsightly knob in front of the ankylosed knee, and adds one more risk to the operation by possibly retaining a point of disease. On the whole, I do not think much time is gained by using the Esmarch, and not very much blood is saved, for the actual vessels which require tying are by no means numerous. Moreover, one can judge much more accurately of the condition of the sawed surfaces of bone when the blood is in them than when they are bloodless. Bad bits are more easy to make out. Patches of tubercular deposit or of rarefying osteitis stand out much more clearly, when the surface of the bone is red and full of blood, than when it is blanched uniformly by the tourniquet. So that, on the whole, I think we gain by letting the oozing gradually cease while the operation is in progress, seeing that, when we are ready to finish up, we then have the wound dry, and the limb fit to place at once upon its splint; while we certainly can come to a better opinion as to the condition of the cut surfaces of the bones. One of the most notable improvements has been in the method of sawing the bones. Dr. Fenwick, of Montreal, has done a great deal of good work by demonstrating the necessity of preserving as broad surfaces of bone as possible, and, furthermore, much credit is due to him for employing a wedge-shaped method of section. He cut a V-shaped piece out of the tibia, and sawed the femur like a wedge to fit into

it. By this means a very great amount of steadiness can be maintained between the bones during the after treatment. I myself prefer cutting the bones on the round. That is to say, the tibia should be cut into a concavity with a Butcher's saw, beginning the section behind at the very edge of the bone, and bringing the saw up again at the very margin in front. With regard to the femur, I begin behind just where the cartilages on the condyles end posteriorly, and follow the exact curve of the condyles, removing only a very thin slice of bone as far up in front as the point where the cartilage ends at the top of the trochlea. By doing this, barely an inch need be lost from both bones together. Then, the sections being carefully dried and examined, any suspicious bits can be thoroughly dug out with a stout Volkmann's spoon.

I only take credit to myself for one little suggestion in this operation. A good many years ago I noticed that, even in cases where the interior of the joint was seriously disintegrated, the posterior crucial ligament remained intact. In one case the ligament was as firm and shining as ever, and so it occurred to me to try and save it; and since then I have found that there is hardly an instance in which it is not possible to do so. So far back is the ligament attached, that the saw can be applied to the posterior edge of the upper surface of the tibia quite in front of it, while it is very seldom indeed that so much femur need be removed as to compromise its superior attachment. I think that the preservation of this ligament decidedly helps to maintain the bones in position by preventing the tibia from falling back, and that it is one of several small points, the individual value of which is perhaps not very great, but which, when all put in force at once, contribute very materially to obtaining a sure and speedy recovery.

Perhaps one of the most useful details of the whole operation consists in obtaining a thoroughly healthy surface to the wound, by the careful removal of all diseased tissues. I now carefully dissect away every bit of thickened synovial tissue, and cut off all masses of thickened, chronically inflamed material, and scrape clean with a spoon all sinuses and abscess cavities, before closing the wound, and I am convinced that ten or twelve minutes so spent will make a wonderful odds in the rapidity with which the case advances to cure. Probably Howse's splint and fixation dressing, or Thomas's splint meet all the needed requirements of lightness, ease of management, steadiness and comfort to the patient. I have used both. I am most accustomed to Thomas's splint, and so generally employ it. A very necessary adjunct to it is a wooden foot-piece; this steadies the foot, which means steadying the upper end of the tibia. If the Thomas's splint be well fixed, the limb can be laid hold of and literally flourished about, the movement taking place entirely at the hip-joint, and the rest of the limb being as rigid as the bars of the splint itself.—*Medical Press and Circular*, April 6, 1887, p. 312.

40.—ON SOME ELEMENTS OF SUCCESS IN EXCISION OF THE KNEE JOINT.

By W. THORNLEY STOKER, M.D., Professor of Anatomy,
F.R.C.S.I., Surgeon to the Richmond Hospital, Dublin.

Given a case of disease of the knee-joint well selected for operation, there are three factors of superlative importance in its prospect of success. (1) Complete removal of all diseased structures. (2) Relative permanence of dressings. (3) Thorough fixation of parts.

1. As regards the first of these I agree with Professor Humphry that prolonged scrofulous suppuration is the most common cause of failure in this operation. It is of paramount importance to remove thoroughly not only diseased bone, but any soft structures which are engaged. The tissue which is at once the most rich in tubercular foci, and the most difficult to remove, owing to its complex involutions, is the synovial membrane. I have latterly made it a general practice to divide the flap in the middle line as high as the synovial pouch extends, and to make a careful dissection of the exposed membrane. This is an extremely tedious and troublesome proceeding, requiring the use of the scissors and of Volkmann's spoon as well as the knife. Of late my knee-excisions occupy from an hour and a half to two hours, but surgeons who follow this practice will find their trouble rewarded by their results. I feel that some emphasis should be laid on this point, because it is not always sufficiently attended to; and no better proof of this can be found than the comparatively short period usually occupied by an operation which, in cases where the synovial membrane is much diseased, demands a special expenditure of time.

2. To the relative permanence of the dressings employed, too much importance cannot be attached. In all my late cases, I have found it possible to keep the initial dressing on for from two to three weeks, and have once found the wound completely healed on its removal. The first essential to securing permanence in dressing is that the wound should be absolutely dry and free from all oozing. With a view to the better attainment of this end I have relinquished the use of Esmarch's bandage, which we formerly employed in the Richmond Hospital in most cases of excision of joints. I use no tourniquet; each vessel is secured by a catch-forceps, and tied as soon as possible. The hemorrhage is extremely small, and, independent of the disappearance of the subsequent bleeding which follows the use of Esmarch's bandage, no matter how skilfully applied, there is less actual loss of blood than when it has been employed. The method of dressing I have found most advantageous has been used in conjunction with such usual strict antiseptic aids as I need not detail, and is as follows:—The wound having been closed, the knee is carefully and evenly

bandaged with carbolised gauze or sublimated muslin rollers, which keep the parts evenly and gently supported for some inches above and below the seat of operation. The knee is then enclosed in a thick covering of iodoform cotton, evenly applied with a bandage, so as to give uniform and elastic support. The entire limb is bandaged with flannel rollers, one being applied below the dressings, and a second above them; the splints are then applied.

3. Thorough fixation of the parts is a problem the difficulty of solving which is shown by the variety of splints and methods of suturing the bones which have been proposed. The splints I have used of late years are those of Mr. Patrick Heron Watson, as modified by my colleague, Mr. Thomson—that is to say, they are made of hoop-iron instead of cylindrical metal. When so constructed they can be used without cross-pieces, and are not likely to slip to the side. The bridges opposite the knee afford every facility for changing the dressings without disturbing the splints. The use of plaster-of-Paris as a means of applying the splints I have abandoned; it is likely to get defiled by discharge, if there be any, or by excreta in children, it soon becomes loose, and its removal causes great pain and disturbance to the patient. If the splints are applied with flannel bandages they can be removed without inconvenience, particularly when the bones have been secured by the method presently to be detailed. No splint will, however, give by itself anything like perfect fixation to the divided ends of the bones, and all recorded means of suturing them which I have seen tried have been either defective or actually injurious. In considering this difficulty, I devised a plan of securing the tibia and femur to each other, which I first put into practice on March 3rd, 1886, and which meets the want. I showed a dry preparation to illustrate the method, and a patient in whose case it had been used, at the Academy of Medicine on May 21st, 1886.

When the wound is ready to be closed, having punctured the skin on each side of the tubercle of the tibia with a tenotome, I insert a steel awl into the bone at each of these points. The instrument is made to enter the tibia in a direction upwards, backwards, and outwards from the middle line of the limb. It is only pushed into the bone for about three-quarters of an inch, so as to penetrate its compact covering, and give the proper direction to the silver dowels afterwards used. A silver wire, a shade larger in diameter than the awl, having its end filed to a chisel-shaped edge, is then pushed into each perforation, and, the femur being held in good relation with the tibia, is made to penetrate the upper bone as far backwards as the compact covering of its popliteal surface. The dowels may be either made to diverge or approximate as they pass upwards. The former direction is best, as they will, when so introduced, give greater fixity and freedom

from rotatory motion than when crossed, as directed by Mr. Marrant Baker. They should not be parallel, as they then offer little resistance to vertical displacement. In the case of very young children, one dowel introduced in the middle line below the tubercle, and directed upwards and backwards, will be found sufficient. It is important that the dowels should be a little larger than the awl, so as to fit tightly. The size most suitable is No. 14 Birmingham wire-gauge, that is, about the calibre of a French No. 7 bougie. The soft edge of the silver passes readily through the cancellous tissue, but with difficulty through the compact layer which covers it, and therefore, with a view to avoid entering the popliteal space, silver should be preferred to the steel recommended by Mr. Marrant Baker. It seems to me to be also preferable to the bone pins recommended by Mr. Howard Marsh, more easily introduced, with less injury to the cancellous tissue, and less liable to give way under any sudden strain. The dowels are then cut half an inch from the skin, and their ends included in the dressings. I have usually removed them at the first or second dressing, from two to three weeks after the operation, and generally found the bones firmly united. It is better to use the dowels themselves to bore their way into the bone, once the initial direction has been given by the punctures with the awl, as they fit more tightly, and thus afford greater immobility. They cause no irritation, and the sinuses remaining when they have been withdrawn heal almost immediately. Should these sinuses be found, on larger experience, occasionally to remain open, it would indicate the necessity for bone-drainage, which it seems to me they are capable, under the circumstances, of effecting.

These dowels have been used during the past year, not only by myself and my colleagues, Sir William Stokes and Messrs. Corley and Thomson, but by Mr. Franks, of the Adelaide Hospital. They all speak highly of their merits. The fixity of the bones is so complete that the patient is quite free from pain, and does not fear to move the limb or submit it to dressing or manipulation. Those who have seen the pain and terror of examination felt by children after this operation, and the constitutional disturbance due to these causes, will understand the advantage of a method which allows the limb to be moved freely when necessary. [Three illustrative cases are related by the author.]—*British Medical Journal*, April 2, 1887, p. 721.

41.—THE TREATMENT OF TUBERCULOSIS OF JOINTS, ETC., BY ACID CALCIUM PHOSPHATE.

So frequent is the occurrence of local tuberculosis, and so serious are its permanent results when joints are attacked, that a mode of treatment which promises not only the cure of the local disease

but avoids the loss of motion so often resulting after other treatments, is worthy of consideration and trial. In a recent number of the Medical News, we described Kolischer's treatment by the injection of acid calcium phosphate, as reported to the Academy of Physicians of Vienna. We are now in a position, from his later reports, to give our readers the details of his method, and his conclusions as to its value, based upon the study of 500 cases.

From the *Wiener medizinische Presse* we learn that the solution used by injection contains 6·5 per cent. of acid calcium phosphate, with 1 to 1000 of free phosphoric acid; for the saturation of gauze, which is used in tamponing tuberculous fistulæ and dressing tuberculous ulcers, a solution of 6·5 per cent. acid calcium phosphate containing 1 per cent. of free phosphoric acid is employed; the proportion of free acid is increased to 2 per cent. where an especially caustic effect is desired.

Previous to injection the surface of the diseased part is disinfected by mercuric chloride; the injection is made with a platinum needle introduced deeply into the tissues: if great pain results, cocaine may be added to the solution. The contents of a Pravaz's syringe may be given at one injection; all injections used were sterilized. [The formulæ for these solutions will be found in the *Synopsis* of this volume of the *Retrospect*.]

Froschauer states that he was led, when studying the influence of phosphoric compounds upon anthrax, to infer their power to influence tuberculosis. He cites the carnivora as less liable to many infectious diseases than the herbivora, and explains this fact by the acid calcium phosphate which is produced in the decomposition of nitrogenous food, before the formation of destructive ammoniacal compounds occurs. He reasons that the administration of the acid phosphate will increase the natural resistance of the carnivorous organism, and greatly assist it in its struggle with tubercular infection.

Kolischer's experience leads him to consider his method especially valuable with children, in whom, in many cases, speedy cures result, while others recover after prolonged treatment and over-coming of tedious complications. In rare cases it is without effect. The gauze saturated with calcium phosphate solution has been found an excellent dressing material in the treatment of caries.

Patients at about adolescence are among the most favourable cases; those whose disease has resisted other methods of treatment, and in whom extensive caries exists, were generally cured in from three to four months. The percentage of unimproved cases among these patients was very small. In older persons persistent treatment was much less successful. When tuberculosis was deeply seated it was not influenced until suppuration had reached the surface, when free drainage and tamponing with the gauze were generally successful. External tuberculosis among the phthisical

was rarely cured; cold abscesses could be emptied, tamponed, and healed, but the general infection was uninfluenced.

Albert, in whose clinic this treatment is in use, believes that it is a distinct advance in surgery, and is destined to improve markedly the results obtained in localized tuberculosis.—*Editor: Medical News, August 13, 1887, p. 188.*

42.—NOTES ON THOMAS'S HIP SPLINT.

By ROBERT JONES, L.R.C.P., M.R.C.S., Surgeon to the Stanley Hospital, Liverpool.

Thomas's splints are at present in such general use that it may be thought an unnecessary task to demonstrate the principles of their application. Such, however, is not the case, and the frequency with which, during the last two or three years, I have been asked to explain at hospitals and Branch meetings their somewhat puzzling functions proves the need of information on the subject. In the present article it will be impossible to do more than briefly run over the main features of the hip splint, without regard to those splints designed for the knee and ankle.*

The hip splint is composed of wrought iron, which must be sufficiently malleable to admit of being moulded into shape by suitable wrenches, and sufficiently unyielding to prevent any modification in shape by movements, voluntary or accidental, on the part of the patient. Most surgeons give their instrument makers instructions to make the splint light and narrow, apparently unconscious of the fact that the bed and not the patient has to bear its weight. If the splint be made light, the patient usually soon distorts it, and is cured if at all in a deformed position, while motion is allowed to a joint which requires uninterrupted rest. As each splint should be moulded to its patient, and may frequently require readjustment in conformity to the progress of disease, it follows that splints made of unyielding material, such as steel, will be badly fitting and inefficient.

The splint (Fig. 1), which is covered with leather, consists of three wings, A B C (Fig. 1), and an upright or stem (Fig. 3).

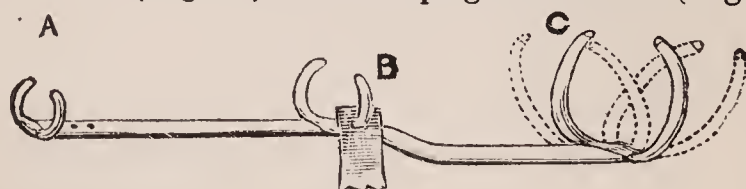


Fig. 1.

Wings.—The top wings extend two-thirds around the chest, at about the level of the nipples. The second extend two-thirds

* For other details regarding splints see Mr. H. O. Thomas's work on the "Hip, Knee, and Ankle." H. K. Lewis & Co.

around the thigh, about an inch or two below the groin. The leg wings bear similar proportions, and reach lower than the middle of the calf. They should all be much more easily bent than the upright, and the uppermost should terminate in loops, meant for the reception of bandages, which extend from the top of the stem (Fig. 5, A) and round the shoulders.

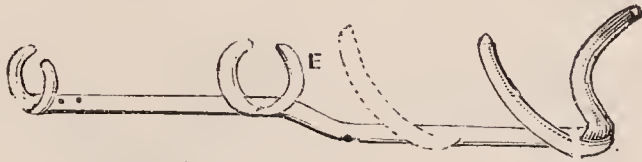


Fig. 2.

Upright or Stem.—It consists of a body portion, a thigh portion, and a buttock bend. The body portion should be parallel to and longer than the thigh portion. This question of direction is extremely important, as any modification of it will invariably tend to the maintenance of deformity, and often to the production of

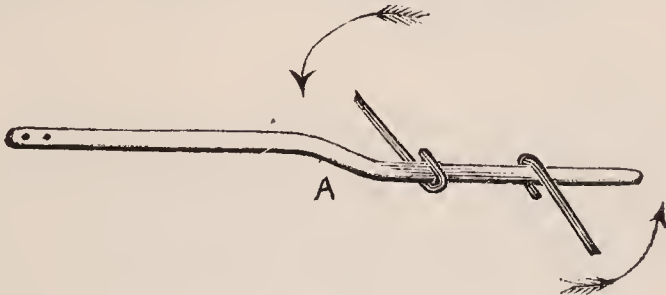


Fig. 3.

pain. The incline in the buttock bend is variable, and in a case where a trochanter is enormously hypertrophied, it may also be dispensed with. In that case the body and thigh portions are not merely parallel, but almost complete a straight line.

Measurement.—In measuring for a splint, the distance from the axilla to middle of leg should be stated with the side affected.

Application.—The buttock bend (A, Fig. 3) should be *in situ* midway between the sacrum and the trochanter major. The body portion of the stem requires in every case a twist with the wrenches (Figs. 10 and 3). This will be readily understood when we recollect that it lies to one side of the spine against the chest, which is barrel-shaped, and the ribs are only thinly clad with muscles. If there were no twist the inner edge of the stem would cause unbearable pain and soreness. The twist ends at the buttock bend as the gluteal region is flat and fleshy. Fig. 3 shows the process of twisting a splint intended for the left side. The wings have been dispensed with for convenience of demonstration. Obviously the twist should be just sufficient to permit the chest-wall to lie in juxtaposition to the flat surface of the splint. It is important to remember that in the majority of cases there is a strong tendency for the splint to escape to the outer side of the

diseased limb, and it is very necessary to counteract it. There are three principal ways of doing this, and in each the wings play their part. It is necessary to adopt a combination of the three methods rather than trust to any one. The methods are (a) making room for the body in a direction calculated to keep the splint towards the spine; (b) fixations of the inner wings; (c) special bandaging.

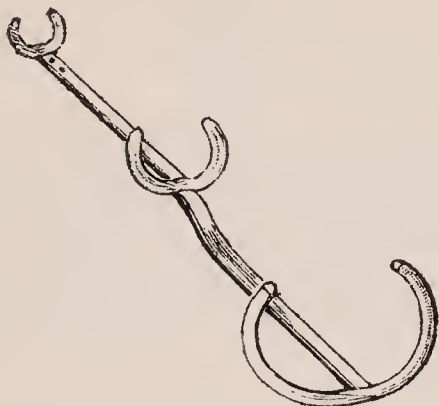


Fig. 4.

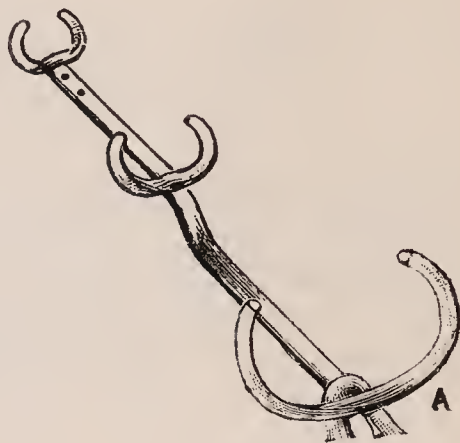


Fig. 5.

Fig. 7 clearly shows methods (a) and (b) in action. It represents a transverse section through the trunk, thigh, and leg, with a right splint in position. As the tendency, therefore, is for the splint to escape towards the right, the wings B, C, and G are left open, so that all movements of the body will carry it towards the right side. At the same time this tendency is intensified by our manipulation of the inner wings A, D, and E, which are pressed moderately tight against the body and limb. The splint, therefore, cannot escape without cutting its way through the patient.

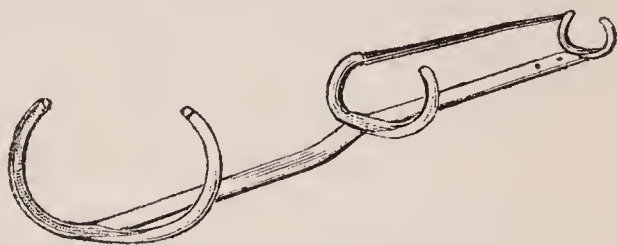


Fig. 6.

These preventives are fortified by another very simple expedient, which consists in making a small hole in the bandage, and passing through it the outer of the thigh wings, and rolling it under the thigh and round the limb, so that a pull is instituted upon the appliance in the direction opposite to its tendency. These three methods in combination render outward displacement impossible. And now is a very favourable time to draw attention to the correct and incorrect methods of bending the body wings. As the chest is not quite circular, it is necessary that the body wings should not be made circular, else, in addition to grievous mechanical blunders,

much soreness may result. By closely examining Fig. 7 this will be seen. The part between A and B, upon which the patient lies, is but very slightly curved, and this allows the body to travel easily towards the outer side B, which has been shown to be a mechanical necessity. Fig. 5, which is correctly modelled, may be compared with the diagram Fig. 4, which represents the almost circular erratic body wings.

Where there is a tendency to adduction combined with genu valgum, Fig. 6 displays a small bar of iron fixed from the tip of the outer thigh wing to that of the calf. The knock-knee can then be bandaged to the outside bar, and the deformity gradually accommodated.

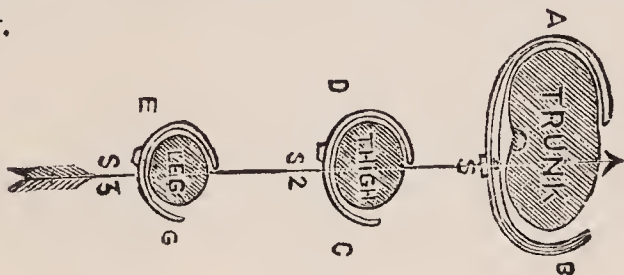


Fig. 7.

But we frequently have to combat a deformity requiring more watching than adduction, and that is abduction, where the body forms a concavity to the inner side of the stem, and where, in advanced cases, the stem lies altogether to the outside of the body. Fig. 2, which is a right splint, illustrates the manner of meeting

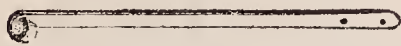


Fig. 8.



Fig. 10.

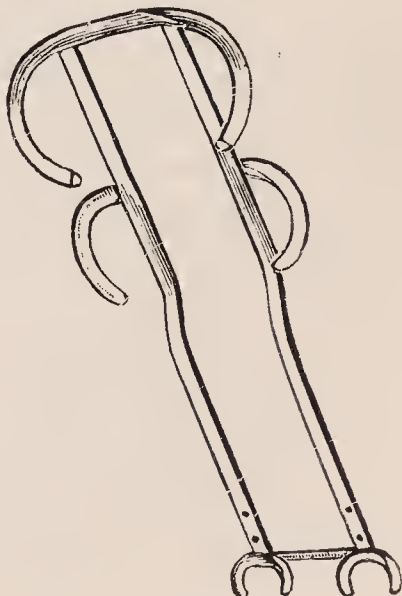


Fig. 9.

this complication. The body wing to the inside of the disease is drawn well down, and pressed firmly against the body convexity in order to get leverage upon the spine sufficiently low not to be counteracted by the mobile character of the vertebral column.

Sometimes with the same end in view an additional wing is fixed, shown in dotted lines on Fig. 2. The outside body wing, to enhance the effect of its opposite, is drawn upwards to allow the body to return into normal shape.

A splint may be either too large or too small, and it is important to modify or increase its length. This is quite simply done. If the splint is too large, draw both body wings towards the abdomen; if too short, draw body wings towards the neck. The dotted lines (Fig. 1) will illustrate this.

One great drawback in the treatment of hip disease in children is their strong efforts in the absence of overlookers to hobble across the ward or to another room. This is now quite overcome by Mr. Thomas in his appliance known as the "nurse" (Fig. 8). In all the diagrams attached to this paper will be noticed two small dots just above the leg wings, which represent holes found on perforating the leather covering in that vicinity. The "nurse," which is merely an iron bar, also has two holes, and it is affixed by screws to the under extremity of the hip splint. The advantage of this is obvious, as it prevents any attempt at placing the leg on the floor.

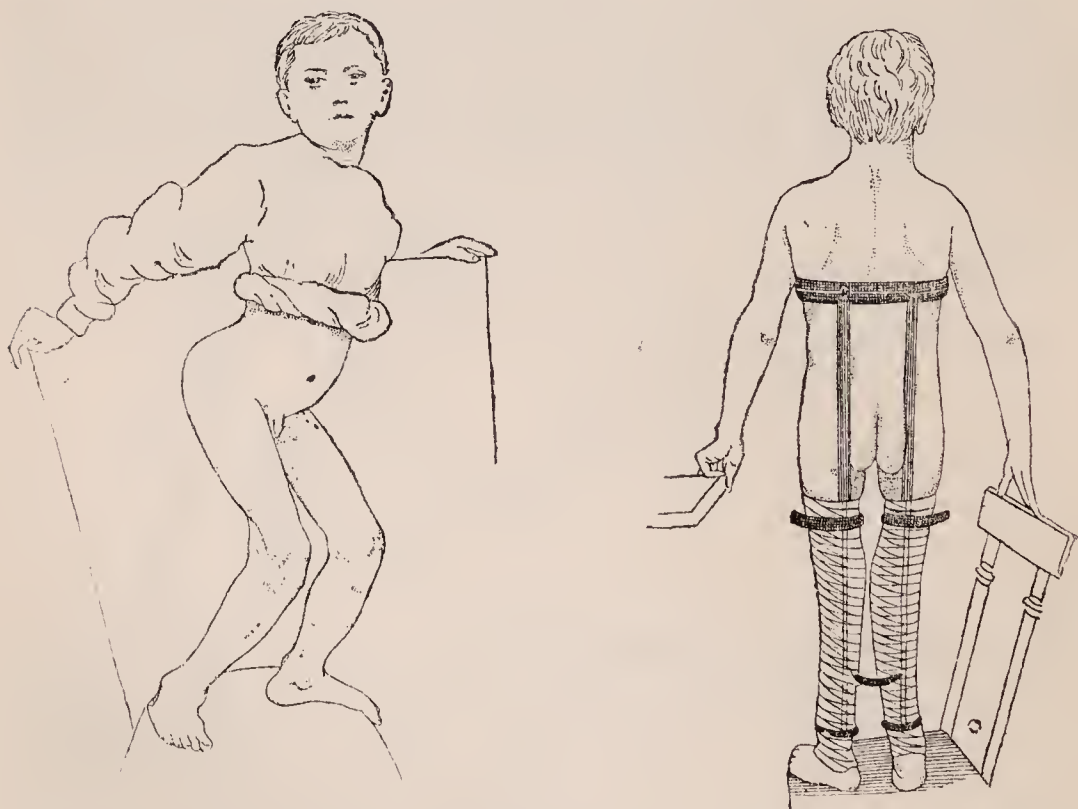


Fig. 11.

The hip splint may fulfil several other functions apart from that of treating morbus coxarius. Amongst these may be mentioned its use in psoas abscess, in sacro iliac disease, in fracture of the neck of the femur, and in the reduction of old hip-joint deformities.

43.—ON A NEW PELVIC TOURNIQUET FOR AMPUTATION.
AT THE HIP JOINT AND OTHER OPERATIONS.

By JOHN WARD COUSINS, M.D.Lond., F.R.C.S., Senior Surgeon
to the Royal Portsmouth Hospital.

The recognition of the operation of amputation at the hip-joint as a surgical proceeding occurred about the end of the last century, and in the pre-anæsthetic period the effectual restraining of hemorrhage was always a matter of difficulty and danger. During the last few years the operation has been widely practised, and various methods have been employed by surgeons for controlling the circulation through the limb. 1. Digital compression of the femoral and external iliac arteries. When the flap operation is performed, this manipulation must be entrusted to a steady assistant who can undertake to follow the knife and to grasp the end of the vessel as soon as it is divided. An operation rendered tedious from any cause is sure, however, to excite painful weariness of the hand, and sometimes even severe cramp from prolonged muscular tension. Except for operations upon children, digital compression ought now to be regarded only as an auxiliary measure. 2. External compression by means of a rigid tourniquet. For this purpose Lister's aortic compressor has been very generally employed. It consists of a bar of steel shaped like a horseshoe, having at one extremity the spinal pad, and at the other a rod working through a female screw and carrying the abdominal pad. The application of this method is certainly not free from risk. The pressure of the instrument over the centre of the abdomen interferes with the movements of respiration; at the same time, the occlusion of the vessel by the force of an unyielding screw involves the bruising of internal structures and the dangerous compression of important organs. 3. Internal compression of the iliac artery through the rectum. The rectal lever, recently introduced by Mr. R. Davy, is a very powerful instrument for controlling the circulation, and in the hands of the inventor it has been used with marked success; still, it is my opinion that it can never receive universal adoption. The finger cannot guide the rigid extremity of the instrument, and the greatest care and dexterity are insufficient to protect the pelvic structures from the dangers of contusion and injury. 4. Elastic compression of the iliac artery over the pelvic brim, and simultaneous pressure upon the posterior vessels at the sacro-sciatic notch. This excellent method is the invention of Mr. Jordan Lloyd, of Birmingham. It can be effectually carried out by one assistant, armed with a calico roller, a piece of indiarubber bandage, and a safety-pin. From my own experience, I regard this form of elastic compression as far preferable to all the other devices which have been hitherto employed for the purpose of preventing hemorrhage during hip operations; and I venture to express the opinion that it is destined to obtain general adoption in the future.

The pelvic tourniquet represented in the engraving has been designed for the purpose of facilitating the practice of elastic compression. It is a modification of the elastic cord tourniquet introduced by me some years since. It does not require the hands of an assistant to keep it in a state of tension, and the pressure of the cords over the compressor can be regulated with great exactness. The instrument consists of three parts: 1. A metallic clamp by which the cord is instantly tightened and loosened. 2. An endless elastic cord with a mark at the spot where the clamp is to

FIG. 1.

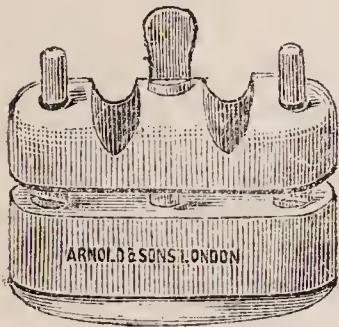
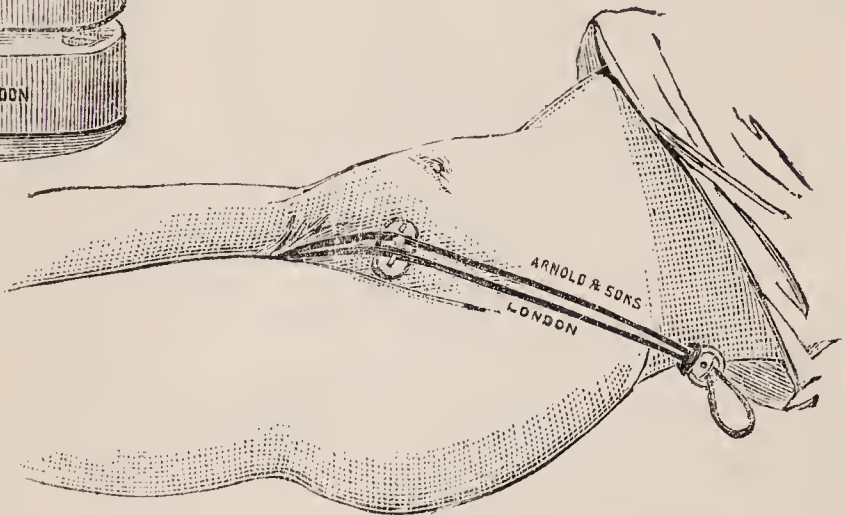


FIG. 2.



be attached to it. 3. An iliac compressor consisting of a well-padded wooden block, with grooves on its upper surface for holding in position the elastic cords. (See Fig. 1.) The compressor can be elevated and depressed by the action of a central screw and two powerful recoil springs. (See Fig. 2.)

The method of application is very simple. After fixing the clamp on the cord, and emptying the limb of blood by elevation and friction, the patient must be turned over to the opposite side, so that the cord may be accurately adjusted, and the abdominal organs displaced out of the way of the compressor. The centre of the elastic ring is now inserted between the thighs—one loop is passed behind the tuberosity of the ischium, while the other loop, carrying the clamp, is placed in the grooves on the compressor. Both loops are now drawn upwards and outwards, and when they are sufficiently tightened the clamp is shut above the crest of the ilium. The external iliac artery can now be completely occluded by releasing the screw, at the same time the posterior vessels are

controlled by the cords at the sacro-sciatic notch. Sometimes it will be found convenient to place the compressor in position under the cords after the closure of the clamp. The pelvic tourniquet is neatly made for me by Messrs. Arnold and Sons, of West Smithfield.—*Lancet*, March 19, 1887, p. 566.

44.—ON STIFFNESS OF THE GREAT TOE IN ADOLESCENTS.

By J. M. COTTERILL, M.B., F.R.C.S.E., Assistant Surgeon
to the Edinburgh Royal Infirmary.

Considerable doubt and difference of opinion have been expressed by various surgeons as to the precise pathology of this condition, which consists of an apparent flexion of the great toe, accompanied by stiffness, and frequently by pain, in its metatarso-phalangeal joint. There seems to be no mention of the subject in any standard work on surgery, but I do not consider it a rare condition; for instance, I have seen three cases during the last month.

Mr. Davies-Colley, in a paper read before the Clinical Society of London, is reported to have attributed it to one of two causes; either (1) injury to the joint followed by contraction, or (2) pressure of short rigid boots upon an abnormally long great toe. Rheumatism, gout, contractions of tendons and ligaments, are amongst other causes suggested by various authorities. Mr. Symonds says: "It occurs in young boys, especially those with flat feet. Some of the boys had a long great toe." The general consensus of opinion seems to have been strongly against the idea of flat foot being an important factor. Mr. Davies-Colley "did not think flat foot had much to do with it;" while another speaker stated that this deformity was unknown in barefooted races, though flat-foot was common with them.

I am convinced that most, if not all, typical cases are dependent upon a combination of flat foot (or a tendency to it) with rigid and short boots. Flat foot alone will not produce it; ill-fitting boots alone will not do so; it requires a combination of the two. A short boot might perhaps set up irritation in the joint, but will not cause the disarrangement of parts peculiar to this disorder. The process, then, I take to be as follows: The patient has a short, shallow, and rigid boot, which firmly grasps the toe, making it an absolutely fixed point. Given, then, the condition of flat foot, or even that of an undue laxity in the ligaments which should support the instep, the patient on walking causes depression of the proximal end of the first metatarsal bone. This necessarily alters the relations of the structures at the distal end of the bone; that is, at the metatarso-phalangeal joint, as follows: (1) The articular cartilage of the metatarsal bone is uncovered on its dorsal aspect, as would happen in strong flexion of the toe (this I have verified on a good dissected specimen); (2) the dorsal portion of the capsular liga-

ment is at the same time put severely on the stretch. These fibres do not at any time admit of great movement of the toe in flexion, and the pain referred to the part, and sub-inflammatory changes taking place in it are, I believe, amply explained by these two circumstances. I need not remind any practical surgeon of the severe pain caused by the continued stretching of ligamentous structures.

In the early stages the only symptom is slight pain, referred to the dorsal aspect of the joint (as one would expect), and increased on movement. A little later one finds swelling of the soft parts, or of the bone itself, with redness and inflammation. This may go on to general involvement of the joint, with more or less complete fibrous ankylosis in the distorted position, and contractions of plantar ligaments and muscles. Not infrequently in old-standing cases there appears to be an atrophic condition of the parts concerned, rather than an increase in their size. It is now easily explained why barefooted races are exempt from this disorder: the element of the fixed toe is wanting. The apparently abnormal length of the great toe sometimes noticed is caused by the lengthening of the inner side of the foot by the conversion, more or less complete, of the arch of the instep into the straight line of flat-foot. It, moreover, may occasionally happen that the inflammation caused by the deformity, existing as it does in close relation to the epiphyses of young and rapidly growing bones, stimulates them to an increased growth.

Mr. Davies-Colley suggests the name "*hallux flexus*." I must beg to protest against the adoption of this term, as, if my pathology be correct, it implies a misconception of the truth: for it is not in reality a flexion of the hallux, but of the metatarsal bone. I would suggest the name "*hallux rigidus*," as free from the above objection.

Rheumatism and gout have, I believe, nothing beyond an accidental relation to this disorder.

In confirmation of the views expressed above, it must be borne in mind that "*hallux rigidus*" always occurs in young growing people, who are constantly on their feet—in short, the very class which supplies nearly all our cases of flat-foot. Another, and to me, at least, a most convincing argument, is that I have never failed to cure any case of early disease (that is, before ankylosis) by taking proper means to support the instep. In more advanced cases, where the pain is severe and swelling considerable, fomentations, rest, gentle support with light splints, and other such means will suggest themselves. When more severe symptoms have responded to this treatment, the important point is to keep up the instep.

In the third and most advanced set of cases, where firm ankylosis is present, with contractions of muscles and ligaments, little, if any, real improvement can be expected from blistering, tenotomy, and the like; while the routine practice of using splints for an indefinite period is, as might be expected, merely palliative, and as a cure is

as unsatisfactory as it is irrational. The proposal made by Mr. Davies-Colley is probably the correct one, namely, to excise the proximal half of the first phalanx; and I should treat the case in such a way as to ensure a certain amount of movement in the new joint.—*British Med. Journal*, May 28, 1887, p. 1158.

45.—ON A METHOD OF DETECTING AND REMOVING NEEDLES EMBEDDED IN THE TISSUES.

By H. LITTLEWOOD, F.R.C.S., Resident Surgeon, Leeds Infirmary.

I believe the general advice given by surgeons when a needle becomes embedded in the tissues, if it cannot be felt, is “to let it alone,” in the hope that it will either work its way out, or become embedded where it will give rise to no trouble; the reason being that the task of removal under these conditions is always very difficult and often impossible—almost like looking for the proverbial needle in the haystack. Having had several such cases, where I could not be actually sure of the presence of the needle, I have gone on the plan of “letting alone;” in two or three cases the patients have come to me several weeks after, bringing the needle, which had worked its way out, they having in the meantime undergone several weeks of pain and mental anxiety. These cases led me to try if it were not possible first to detect the presence of, and then remove, the needle. Since then I have adopted the following plan with considerable success.

1. The part supposed to contain the needle is thoroughly rubbed over with an electro-magnet, so as to magnetise the metal if present.
2. A delicately-balanced magnetic needle is held over the part. If the needle is present, its position can be ascertained by the attraction or repulsion of the poles of the magnetic needle.
3. Having ascertained the presence of a needle (e.g., in the hand), the part is rendered bloodless, and a grain or more of cocaine injected hypodermically.
4. An incision is made over the ascertained position of the needle.
5. The electro-magnet is then inserted into the wound, and with it the needle is felt for. Sometimes it will be found and removed quite easily, at others great difficulty will be experienced, taking as long as one-half or three-quarters of an hour. This may be due to the fact that its position has not been accurately ascertained; it may be lying across the incision, or it may be so firmly embedded in the tissues that the electro-magnet is not able to withdraw it. If this occurs the incision must be enlarged, and the edges held apart with some non-magnetic retractors; using the electro-magnet as a guide, the needle may be seen and removed with forceps. If the needle is firmly fixed, the following plan has been adopted:—By placing the positive pole of a galvanic battery on the surface of the body, and the negative pole in direct contact with the needle, this becomes loosened by electrolysis, and can

then be easily removed by the electro-magnet. This latter method has been found useful in two cases for the removal of sewing-machine needles that had transfixed the end of the finger, and were so firmly fixed as not to be removable by forceps. The electrolytic action loosened the needles so that they could be removed quite easily.

Mr. Marshall, in his lectures on Surgery at University College, used to tell us that needles, &c., could be detected in the tissues by the method described above. I had not seen it practically tested. After having removed two or three needles by the method described above, I referred to Neale's Digest to see what had been written on the subject. I find the following references which I think will be of interest:—In the Medical Times and Gazette (vol. i., 1857, p. 298) is a paper by Dr. Bence Jones, entitled "On a ready method of determining the presence, position, depth, and length of a Needle broken into the Foot." In the same journal (vol. ii., 1876, page 531) is a paper by Sir Benjamin Brodie, in which the presence of a needle in the leg of his own son was demonstrated at the Royal Institution by means of the electro-magnet. It was not then removed, but allowed to remain in some time, until it worked its way to the skin on the opposite side of the leg, and then removed. Both these papers refer only to the detection of the needle. In the Lancet (vol. ii. 1876, p. 700) is a communication by an army surgeon named Thompson, describing a case in which he made an incision over the site of a piece of metal embedded, and then bandaged an ordinary magnet over the part for twenty-four hours, with the satisfaction of finding the metal attached to the magnet at the end of that time.

I have now removed six needles from the hand and a piece of steel embedded in the foot. In none of the cases could I feel the piece of metal or be sure of its presence without the aid of the method above described. As it requires some expensive apparatus, and sometimes takes a long time, I am afraid this method will not become general; but it is well worth the time and trouble spent if in the end we are successful, as patients really suffer a great deal of pain and anxiety if these foreign bodies are allowed to remain embedded in the tissues.—*Lancet*, Aug. 27, 1887, p. 412.

ORGANS OF RESPIRATION.

46.—EXCISION OF PORTIONS OF THE RIBS IN EMPYÆMA.

By JAS. F. GOODHART, M.D., F.R.C.P., Physician to Guy's Hospital.

[We reproduce here the latter portion of an address on the "Behaviour of Fluid in the Chest and the Treatment of Empyema." Dr. Goodhart's remarks upon the varying behaviour and physical manifestations of fluid in the pleural cavity are of much interest,

dealing, as they do, with the notorious liability of children to suffer from pus rather than serum effusions, the over-estimation of physical signs and the natural methods of cure, amongst many other points, about which precise statements are not unfrequently made to cover a want of complete information.]

The prevailing impression seems to me to be that in empyema the lung collapses, and there is a cavity of large size which must contract and granulate up from the bottom. I thought the same myself once, and in that light looked upon the disease as a very desperate one, for granting the full power of the pleura to form a copious supply of lymph, and of the ribs to sink in to a great extent, yet even with all this help it hardly seemed a likely thing that the cavity could be obliterated. But a larger experience tells one, I think, that the argument is only good for cases that are neglected by long standing, and for cases in which pre-existing disease of the lung is the cause of the empyema. These are the cases in which the surgeon is at his wit's end to procure obliteration of the cavity, and, do all he can with excision of the ribs, and what not, many are the cases of this sort in which the surfaces will not come together, and the cavity will not close. But this is not the rule; it is the exception.

It has been the common practice of surgery of the last few years to make a free incision in these cases, and this plan has been very generally adopted, I think, at Guy's Hospital, and certainly so both by Dr. Taylor and myself at the Evelina Hospital. A large-bore rubber drainage-tube is inserted and retained as long as may be necessary. I myself prefer that this tube should be shortened after a week or ten days, so that it is just long enough to pass in between the ribs and no more. This allows for the continued patency of the opening into the pleura as long as may be necessary, and believing, as I do, that the idea of drainage being required from the very lowest part of the pleura is a mistaken one, I have been confirmed in this opinion by finding that, in the large majority of cases, this plan is successful. So far as I can make out, there have been forty-seven cases operated upon in the Evelina Hospital in the last five or six years, some under my own care, others under Dr. Taylor, and to those I may add three others which have occurred to me elsewhere in the last few months, making a total of fifty: of these, forty-two have quite recovered; a sinus has remained in three, and there have been five deaths. As regards these, however, it is only fair to say that one was due to suppurative pericarditis in addition to the empyema; another to the empyema being double; a third was due to a foreign body in the bronchus and septic pneumonia; a fourth was a huge collection, with a history of eighteen months' duration, and death occurred within a few days of the operation; and the last case had been operated upon, and was doing well, when the child caught measles and died from the

effects of broncho-pneumonia. I do not think that in any one of the five was there any difficulty as regards the drainage from the simple incision, and none of them can be supposed to have any bearing upon the question whether or no excision of a portion of one or more ribs is advisable as a rule. In this series of cases a portion of rib has been excised three times; all three were under my own care. In two of them the operation was done when I was away for my holiday, and although several weeks had elapsed since the incision, I am not prepared to say that I might not have waited longer, and still with the hope of a good result. Nevertheless, to make the case as full as possible in favour of excision of the ribs, I will say that here were two cases in which simple incision was not satisfactory, and excision of a rib had to be practised. One of them healed up and did well; the other, after several months, has still a sinus, and I propose to have still more of the ribs removed. In the third case, a small piece of one rib was removed at the first operation, because it was quite impossible to pass a tube into the chest of any size sufficient to ensure adequate drainage.

Now in the *Lancet* for 1886 (On the Surgical Treatment of Empyema) my friend Mr. Godlee, for whose surgical skill I have the highest possible respect—so much so, indeed, that I would almost rather distrust my own opinion than his in this matter—published a series of thirty cases of empyema in children, and in nineteen of them a piece of rib was removed. I suppose it will be allowed that any operation, if unnecessary, is harmful; and I feel further disposed to say that the resection of a rib in young children is an operation of some severity, do it with what ease you may, although it is not a proceeding that need be made much of, if it can be shown that any gain comes of it. Well, here is one observer who thinks it advisable to excise a piece of rib in two-thirds of his series of cases; another only about once in every fifteen cases.

I cannot think that there can have been such a difference between the two sets of cases; and I believe the difference of treatment is to be attributed to our starting on different bases. Mr. Godlee starts on this basis. He says, let us consider the manner in which a cure is effected under the circumstances of free incision into the chest (*Lancet*, 1886, vol. i, p. 51). "The lung, unless it has previously become adherent to the chest-walls at some points, is lying at the back of the thoracic cavity, occupying the hollow formed by the angles of the ribs, and perhaps adherent also to the structures in the middle and posterior mediastina. The process which has to take place in order that the opening may close is a bringing together of the walls of the cavity and the surface of the lung. Now it is quite impossible for the lung to be distended by any inspiratory efforts; this would be opposed to the laws of physics, and no suction power is available so long as there is a free opening into the chest, yet somehow the closure of the cavity is brought

about." Well, if physics decline to have my explanation, I feel disposed to say so much the worse for physics. Anyhow, I have seen a large empyema close up in eight days, which is an equal dilemma for the granulating-up-from-the-bottom and contractile-closure theories. Or, take a recent case that has happened to me: A little girl, aged 8 years, has had an obscure chest mischief since early in January. She does not throw it off, has an evening rise of temperature, and her spine is beginning to curve. I find, on examination, the left side considerably retracted, the heart displaced a little to the right of the sternum. No absolute dulness anywhere, but tubular breathing at the apex under the clavicle, and a generally deficient movement of that side of the chest, and a very poor inspiratory murmur. A needle is put in at the angle of the scapula, and pus drawn; a free incision is then made, and four ounces of pus evacuated. A small piece of rib was excised in this case, because the ribs were so close together that no adequately large drainage-tube could be passed between them. There has been practically no discharge since; the temperature has averaged 99° , or under. The tube was removed on the ninth or tenth day, and the child appears to be well.

Cases such as these (and I have no doubt whatever there are some here who could match them) are by no means satisfactorily cleared up by an explanation of their course such as Mr. Godlee seems to me to sketch, but I venture to think such things are reasonably probable by the means I have indicated. It may indeed be said that the contraction of lymph goes on with extreme rapidity, so much so, indeed, that it is difficult to fix limits to its capacity in this respect, and I should admit this if the contraction were free to act in all directions; but this is not so in the chest; the contractile force is materially limited by the ribs, can only act to any large extent when it has reduced the thoracic wall to the state of forced expiration, by dragging on the lung and diaphragm. But then there is this other difficulty in that explanation. It is in just those cases which close up rapidly that the amount of lymph is smallest, therefore, in just those cases in which repair takes place most quickly and perfectly, the contractile force is most, and I think practically altogether, in abeyance.

I cannot pursue this matter further; I will only say in conclusion, that I never have a rib excised unless the case is an old standing one, or there is no room to put in a large drainage-tube; and as a part of the outcome of the experience I have attempted to condense, I interfere with the pleura as little as possible, and for as short a time as possible. Therefore I never wash out the chest, and I attempt to do away with the drainage-tube at the earliest possible period. A free incision is made in the chest wherever is most convenient, pus having been previously proved to exist at the selected spot by the exploring syringe. A large sized tube is put into the

opening perhaps 5 or 6 inches long. This is shortened within a few days, and if all goes well after a week or ten days, the length may have been reduced to an inch or so, just enough in fact to go between the ribs and no more. The external opening should be kept open long enough to insure that there is no re-collection going on inside. The last case I have had has been treated by a silver tube I had made on the principle I advocate, of keeping the external wound open and leaving the pleura alone. It is a flattened oval \ominus an inch long, with a bore of 4 millimètres by 12. It has a thin metal shield which can be moulded somewhat to the side of the chest. It answered admirably, keeping the ribs apart and giving a free vent, and this in a case not very favourable to success, for the child was only 2 years old. The case was operated on by my colleague Mr. Symonds; the tube was removed on the 15th day, the wound healed up forthwith and the child has since then remained well.

In conclusion, let me say that I have not intended to make any objection to the removal of ribs in properly selected cases, and such I take to be very long-standing cases, or when, which according to our experience is I think not very common, the ribs come so close together that a properly large tube cannot be inserted, or is nipped between them. But it is my belief that in the present day resection of ribs is a common operation, and becoming yet more so. Whereas I think it is quite unnecessary for the great majority of cases.—*British Medical Journal*, June 4, 1887, p. 1204.

47.—ON TRACHEOTOMY.

By WALTER WHITEHEAD, F.R.C.S.E., F.R.S. Ed., Surgeon to the Manchester Royal Infirmary.

The operation of tracheotomy is in many cases confessedly a difficult one to perform. This is emphatically shown by the amount of literature written upon the subject, by the many different ways which have been described and practised, and also by the many dangers warned against. My excuse for proposing any change in the methods usually adopted is the simplicity of the plan I have to suggest, and the ease and success which have invariably attended its performance.

The operation is performed as follows:—The head of the patient being bent well back over a pillow, an incision is made in the usual situation, but of rather greater length than is common. The incision extends through the skin and fascia, as deep as the interval between the sterno-hyoid muscles. The scalpel is now laid aside, and the raspatory used, not only to separate the sterno-hyoids, but to split the strong fascia which runs down from the hyoid bone to enclose the isthmus of the thyroid gland. This fascia is split to a distance extending from the upper limit of the incision down to the isthmus below—that is, supposing it is desired to open the

trachea above the isthmus. The split fascia is then pushed to right and left with the raspatory. Should there be any difficulty in doing this, the fascia is separated to some extent on each side from the upper border of the isthmus. Proceeding carefully, the isthmus itself can be pushed down and the trachea exposed to the necessary extent. If the trachea is to be opened below the isthmus, we proceed in a similar manner, remembering that here, however, we have between the fascia and the trachea a quantity of areolar tissue in which lies the inferior thyroid plexus of veins. The front of the trachea can in this way be cleared perfectly, and, since the method is bloodless, the rings of the tube are seen glistening white at the bottom of the wound. The trachea can now be fixed readily between the left index finger and thumb, and opened to the desired extent. There is little or no difficulty in introducing the cannula, since the trachea can be so steadily fixed and the incision into it so clearly seen.

The above method resembles in many particulars the "bloodless" method of Bose, but in the latter operation the scalpel is used to a much greater extent than in the operation here advocated, and when the scalpel is not to be used the use of the director is advised. But the walls of the veins in this region are very thin, and the sharp edges and point of the director have been frequently known to tear these vessels and rob the operation of its bloodless character. This tearing of the veins is much less likely to occur if the raspatory is used. Moreover, the above operation with the raspatory is not only suitable for cases where the surgeon has abundant time at his disposal, but is advised even in emergency tracheotomy; since, although perhaps a little more time is required to reach the trachea, the certainty that when once reached it can be quickly opened and entered is a distinct ultimate gain. What is urged in favour of the operation is—firstly, the ease with which it can be performed; secondly, the small number of instruments required; and, thirdly, the manner in which it meets the four difficulties usually enumerated—viz., of reaching the trachea, of hemorrhage, of opening the trachea, and of introducing the cannula. Again, it avoids, in an especial manner, those dangers met with when the operation is performed, as it too often is, practically in the dark, from the bleeding, and the not sufficient separation of the parts; thus it is impossible, in this operation, that the cannula should be pushed down between the trachea and the fascia lying in front of it, or that it should be thrust, as has actually happened, into the internal jugular vein. Our resident surgical officer, Mr. J. Collier, who is frequently called upon to perform tracheotomy in emergencies, has definitely adopted the operation described since seeing me open the trachea some months since for the extraction of a gun cap accidentally inspired into the trachea.—*Lancet*, April 30, 1887, p. 873.

48.—ON TUBERCULOSIS OF THE TONSIL.

By W. LUBLINSKI, M.D., Berlin.

Tuberculosis of the tonsils is a disease which occurs very rarely, and Virchow, in his work on tumours, merely refers to it as follows: "Why it is that tuberculosis of the tonsils has never been seen, I am unable to say; perhaps it is only from want of observation. However, even if it ought to have been observed, its rarity is so great that this organ may be assumed to enjoy a kind of immunity." Although at present this statement of Virchow can no longer be maintained in full, since tuberculosis of the tonsils has been repeatedly observed as part of a tubercular pharyngitis, there is no doubt that disease of the tonsil alone has been very rarely seen. It is, of course, mentioned in Ziegler's text-book of pathology, and Cornil and Ranvier also state, in their *Manuel d' Histologie Pathologique*, that miliary tuberculosis of the tonsils occurs in "tuberculose généralisée à marche rapide." Strassmann, especially, cites a whole series of cases in Virchow's *Archiv*, Band lxxix, Heft 2, in which tubercles were found post-mortem in tonsils, to all outward appearances, normal; but, to my knowledge, there is no case known in which isolated tuberculosis of the tonsil has been observed as a clinical fact. Therefore, I take the liberty of briefly describing two cases in which the correctness of my diagnosis was confirmed by microscopical examination. But I must, in the first place, remark that in both cases the disease was secondary, since the lungs were highly tubercular. Primary tuberculosis of the tonsils has not yet been observed in man, although it is quite possible that the infective particles might gain admission through them; this has been supposed at least by Baumgarten, who occasionally found tubercular ulcers of the tonsils containing bacilli in animals which had been fed, for experimental purposes, on tubercular material.

My first patient was a workman, aged 33, who complained of sore throat during four months, and great pain on swallowing on the right side for four weeks. He was a strongly built but thin looking man, with hereditary history. On examination, the right lung was found to be in a condition of advanced tubercular disease, and bacilli were discovered in the sputum in large numbers. His throat presented the following appearances: on the right tonsil, which is enlarged and greatly congested, there are several (five) ulcers, varying in size from the head of a pin to a lentil, whose bases are covered with a whitish detritus, and the margins of which are only slightly raised, but somewhat redder than the surrounding parts. There was nothing characteristic about the shape of the ulcers, but the larger ones were more oval in form. There were only two ulcers on the left tonsil. Examination with the laryngoscope revealed a swelling and redness of the free borders of the epiglottis, while the rest of the larynx was normal.

I excised a piece of the right tonsil in order to examine it with the microscope. The tissue was infiltrated with round cells, enclosing numerous very large multi-nucleated giant cells. Here and there opaque, cheesy spots were visible, and large numbers of bacilli were found in the necrosed as well as in the tubercular parts, but the giant cells were not specially attacked by them.

When I saw the patient again, six weeks later, the ulcers had increased very much in size, and had become confluent. Fresh tubercular ulcers had also appeared on the uvula and soft palate. At the same time I observed several infiltrations, about the size of a pin's head, on the lingual surface of the epiglottis, which was very much swollen. An examination of the larynx was no longer possible, on account of the great swelling of the arytenoid cartilages, which were partly hidden by the backward inclination of the epiglottis. The patient died of exhaustion shortly after. The treatment consisted in painting the parts with a 10 per cent. solution of cucaïne and iodol insufflations. I could not observe any good result, especially as I saw the patient very seldom.

The subject of the second case was a waiter, aged 24, who suffered from advanced tuberculosis of both lungs, with large quantities of bacilli in the sputum. He complained for six weeks previously of pain on swallowing, which radiated into the right ear. An examination of his throat revealed several ulcers on the lower part of the atrophied right tonsil. They were about the size of a lentil, and presented an appearance to those of the first patient. The epiglottis, arytenoid cartilages, and aryteno-epiglottidean folds were very much thickened. The space between the arytenoids was ulcerated, and the vocal cords were red and infiltrated. Unfortunately, I could not remove a piece of the tonsil, so I scraped out the ulcers with a curette. There were plenty of bacilli in the scrapings. I then cauterised the ulcers with the galvano-cautery, after which healthy granulations formed and the ulcers healed. Unfortunately, the disease has made such progress in the lungs and larynx that the patient will probably die soon. In the meantime, the ulcers of the tonsil are still healed now, six weeks after the operation. I may add that both patients were perfectly free from syphilis.

It is remarkable that there are no clinical records of isolated tuberculosis of the tonsils, although, as I have said before, pathologists have drawn attention to it. This may be partly due to the fact that this disease has been mistaken for syphilis, from which it could not be distinguished with positive certainty by simple observation alone. But the principal reason is that these tubercular growths seldom break down, an event which could alone render a clinical diagnosis possible. As Strassmann has already pointed out, there is nothing to be seen externally in the diseased

tonsils; the most varied conditions are present in the affected parts, such as atrophy, hypertrophy, &c., and it is only when the disease breaks out on the surface that a clinical diagnosis is possible. It is difficult to say why this occurs so rarely. The great development of fibrous tissue in tonsils which are rarely normal, but are usually either atrophied or hypertrophied, may possibly prevent the degeneration of the new growth, as in tubercular tumours of the larynx.

The prognosis is bad, not so much on account of the disease itself (which can be overcome, at least for a time, as in my second case), but rather on account of the pulmonary lesions which accompany it, and the danger of its extending to neighbouring parts.

The treatment must consist, above all, in trying to destroy the diseased parts with the galvano-cautery; and if this is no longer possible, cucaine must be used for the relief of pain. The ulcerated spots may be powdered with iodol, a method which I have found successful in tuberculosis of the larynx.—*British Medical Journal*, Aug. 27, 1887, p. 456.

49.—ON THE TREATMENT OF OZÆNA.

By RICHARD WILLIAMS, M.R.C.S., Surgeon to the Liverpool Eye and Ear Infirmary.

The treatment of an intractable and chronic affection of this kind involves great perseverance on the part of both surgeon and patient. Many weeks and months are necessary to produce an impression upon the mucous membrane and to improve the character of the discharge, and as it is only exceptionally that the surgeon can see the patient sufficiently often, the latter must be instructed to a large extent to take care of himself. The *local* treatment of ozæna may almost be summed up in the word cleanliness. Our first care should be to thoroughly cleanse the nasal cavities and the pharynx, and for this purpose different methods are employed, the most common plan is probably the nasal douche, with which you are all familiar, and which is useful for the patient himself to use. Personally, I prefer to dislodge as many of the crusts as I can by means of the cotton holder which Messrs. Pickard and Curry have been good enough to make at my suggestion, and which I find very useful for this purpose. The holder is made with parallel ridges running in the direction of its length, which enables the soiled cotton to be easily removed when the operation is completed. This instrument, tipped with absorbent cotton, is immersed in any antiseptic lotion that may be desired for the case, inserted in the nostril, and moved about in such a way as to loosen the crusts and to render them easy of removal. For those crusts situated in the nasal portion of the pharynx the holder is made bent at an angle, and is introduced behind the palate. The cavity

having been thus cleansed, and the membrane exposed, a fresh piece of cotton is dipped in any desired solution and applied directly to the parts. The solutions I most commonly employ are nitrate of silver, chloride of zinc, and one composed of equal parts of tincture of iodine, carbolic acid, and glycerine. The strength of these solutions depends to a large extent upon the individual, but it is surprising how little discomfort a caustic application causes in these atrophic cases. Finally, by means of the insufflator, a quantity of some non-irritating antiseptic powder, such as boracic acid or iodoform, is blown into the cavities of the nares and pharynx. For this purpose I employ an instrument which Messrs. White and Wright have kindly made for me. It differs from other insufflators in this, that the receptacle is placed at the end of the instrument, which therefore offers the minimum of resistance to the discharge of the powder. It can be used from the front through the nostril or posteriorly behind the palate. In the latter situation it answers so well that some of the powder almost invariably escapes through the nostrils, and on examination the cavity will be found covered with the substance employed. As I cannot speak from personal experience, I shall not detain you with other methods of treatment, but I ought to mention Gottstein's plan of plugging with cotton wool, which is well spoken of by most of those who have tried it, although they differ in their explanations of its mode of action. It is said to prevent the formation of crusts, and by its irritant action to have a beneficial effect upon the membrane. For the *constitutional* treatment of ozæna, I have generally relied upon iron, arsenic, and cod-liver oil, in conjunction, of course, with the best attainable hygienic conditions. Although we cannot hope by any method of treatment to replace atrophied tissue, or to restore the resulting lost functions, we can, with the aid of the patient's own efforts and perseverance, do a great deal to render his life tolerable, and to prevent his being a constant source of anxiety to his friends, and of annoyance to all those with whom he has to come in contact.—*Liverpool Med.-Chirurgical Journal*, July 1887, p. 400.

ALIMENTARY CANAL.

50.—NOTES UPON THE OPERATION FOR HARE-LIP.

By EDMUND OWEN, F.R.C.S., Surgeon to St. Mary's Hospital.

To obtain the most artistic result in the operation for hare-lip several practical matters demand attention; chief amongst them is this, that the line of operation be so planned that the cicatrix eventually prove as inconspicuous as it is possible for it to be. It should not descend straight from the nostril to the free border of the lip, or it will be sure to invite attention, especially where it

traverses the mucous border; and if the operation be done in the old-fashioned way, the lower end of the linear scar is apt to be permanently indicated by a triangular notch in the free border of the lip. Then, the healing should be prompt, and the line of union thick and strong, and there should be eventually no white dots upon the surface marking the passage of hare-lip pins.

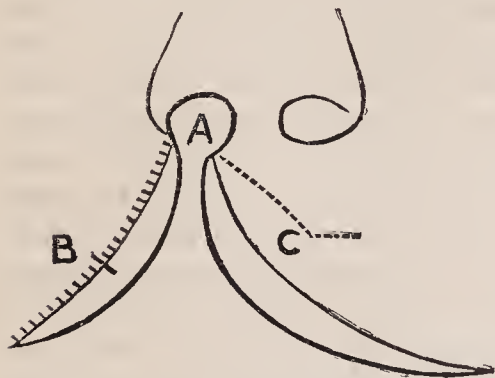


FIG. 1.—Single hare-lip; lines of incisions shown by dots.

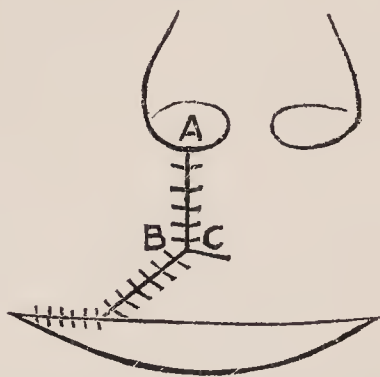


FIG. 2.—Lines of incisions adjusted by fine sutures, no pins being used.

Supposing that the cleft extend into the right nostril, as in Fig. 1, the operation is begun by paring off the mucous membrane from the right side (but without removing any skin) through the whole thickness of the lip, and that not in the vertical direction only, but outwards almost to the angle of the mouth. (Arteries are best secured throughout the operation by forci-pressure forceps.) The mucous border of the lip on the left side of the cleft is to supply the lower border of the right side of the lip; and for this purpose it does not suffice to bring a thin tail of mucous membrane across the cleft—a thick, bold, serviceable flap is needed. This is got by making an incision through the lip with a fine scalpel, from A to C; then, when the sides of the cleft are drawn together by the finger and thumb, the raw surfaces A B, A C are brought together in the vertical line, and are secured by four or five interrupted sutures of fine wire which pass deeply through the substance of the lip, whilst the full part of the labial flap is brought across beneath the vertical incision to form the prolabium. The rest of the flap, which is not merely mucous membrane, is brought to the right side of the lip, being trimmed and adjusted as circumstances demand. (Fig. 2.) Each case may need some special modification of procedure—"one must cut one's coat according to one's cloth"—but the general plan of the operation as described above remains. There is an economy of tissue, for the mucous membrane on one side of the cleft only is wasted; that of the more promising side, with a good deal of the lip tissue, is brought down to form the border of the new lip. It may be that some weeks after the wound has soundly healed a finishing touch or two may be needed.

I have now altogether given up the use of hare-lip pins in the

operation, and since doing so I have dealt with some of the very worst double clefts that I have ever seen, and to my entire satisfaction. The pins were originally used, no doubt, to keep the strain off the sutures, but the introduction of the improved waterproof strapping has rendered them entirely superfluous. A great disadvantage of the pins was that they were apt to leave the points where they passed through the skin marked by permanent and unsightly scars. To diminish the risk of this to the utmost, I had been in the habit of withdrawing them at the end of twenty-four hours, but more recent experience shows that one can obtain better results by discarding them altogether. The sutures should be of fine silver wire passed deeply, and of horsehair which has been soaked in warm carbolic lotion; the latter answer particularly well for adjusting the mucous membrane. Sutures have also to be used freely and deeply along the dental surface of the vertical and oblique wounds; they should be arranged as carefully as are those upon the dermal surface. They complete the adjustment of the edges, they steady the tissues, and they prevent food and the tip of the tongue from getting into the wound. For applying them, the lip must be thoroughly everted. On a few occasions I have met with a hare-lip after operation in which the bond of union was only of the thickness of the skin; I apprehend that if this posterior set of sutures had been used, the adhesion would have been through the whole thickness of the lip. I have never had my attention called to sores upon the tongue or gum from irritation caused by these sutures, and consequently I leave them to find their own way out; the sutures upon the front of the lip I begin to remove on the second day.

When the operation is finished, I cover the lip with a scrap of absorbent wool, and, drawing the cheeks well together with the finger and thumb, I steady them by a piece of waterproof strapping, the wide ends of which reach nearly to the ears, whilst the middle part is narrowed in proportion to the depth of the lip.

It is to be noticed in Fig. 1 that the line of incision *AC* is prolonged for some distance upwards and outwards through the lip; unless this be done, the border of the lip does not lie level, a slight kink being found in it. But on making this secondary incision the flap comes smoothly across.--*Lancet*, Aug. 20, 1887, p. 360.

51.—ON FOUR CASES OF EXCISION OF THE TONGUE.

By A. F. MCGILL, F.R.C.S., Professor of Surgery in the Yorkshire College, and Surgeon to the Leeds Infirmary.

The following remarks are suggested by the experience of four cases in which it has been necessary to excise the tongue. They were all under my care in the Leeds Infirmary within a few weeks of one another. They illustrate the advantage that is

gained by the performance of a preliminary laryngotomy, and the rapid recovery which follows excision by means of the scissors. The method of operating was the same, with slight modifications, in each case.

(1) Laryngotomy was performed, a tracheotomy tube introduced, and a sponge attached to a piece of tape pressed well back into the upper part of the pharynx. The advantages of a preliminary opening into the windpipe are so evident to any one who has operated in the cavity of the mouth with and without this procedure, that it is unnecessary to insist on it. It is however, I believe, more usual for surgeons to open the trachea than to perform laryngotomy. The latter operation has, in my opinion, the advantage that it is much more easily done, and that the resulting wound heals up much more quickly and leaves less scar. The sponge in the pharynx is in every way more satisfactory than the plugging of the trachea with Trendelenberg's tampon. It blocks up both the passage into the trachea and also into the œsophagus, and thus prevents the passage of blood into the stomach, and consequently the unpleasant and perhaps serious vomiting which blood in the stomach is apt to cause. The anæsthetic can be as easily administered without as with the tampon.

(2) To secure a good illumination of the cavity of the mouth, the position of the patient is changed, the head being raised and flexed instead of depressed and extended as it was during the performance of laryngotomy. Two cheek retractors are placed in the angles of the mouth, and secured by tapes tied at the back of the head. A gag is next placed between the molar teeth on one side, and opened to the full extent. The cheek retractors are of great use, because if the gag is used without them the width of the mouth is diminished instead of being increased, as is required.

(3) The tongue is next secured by a stout ligature passed through it, and removed with scissors, as recommended by Mr. Whitehead. The frænum and mucous membrane being first divided, the muscles attached to its under surface and the various arteries are cut through. The arteries can be secured with great ease, and this having been done, as much or as little of the tongue can be removed as the peculiarities of the case require. The operation is one of such extreme simplicity, that it is hard to understand why many surgeons still recommend the use of the ecraseur. The amount of blood lost is usually trifling, and never excessive or dangerous. It is seldom necessary to pass a stitch through the stump of the tongue and tie it to the teeth as recommended by many authors, for the simple reason that it is generally advisable to remove the organ so far back that no stump is left.

(4) The after treatment is of great importance. The wound is

filled with iodoform, which is rubbed thoroughly into all its interstices; it is then plugged with carbolic gauze, the meshes of which are filled with iodoform. The sponge in the pharynx is not removed till all possible oozing has stopped—usually in six or eight hours. The tracheotomy tube is taken out in about twenty-four hours. The patient is, if necessary, fed with nutrient enemata and suppositories, but soon takes liquid nourishment out of a feeding cup, having a piece of india-rubber tubing attached to its mouth. The gauze in the mouth is changed twice daily for three or four days, when it is discontinued, and a gargle of permanganate of potash is kept by the side of the patient, who uses it as often as he feels inclined. He is usually sitting up out of bed within a week, and not unfrequently leaves the hospital in a fortnight. The following are short notes of the cases.

Case 1.—J. W., aged 69. Epithelioma, involving the right half of the tongue, but not extending over the floor of the mouth; duration of disease, three months. He has been a very great smoker, using clay pipes. 19th Feb. Operation performed as described above. 4th March, Left the hospital with the wound healed.

Case 2.—J. R., æt. 57. Epithelioma of right side of the tongue, involving the floor of the mouth and the side of the lower jaw; disease first noticed two months ago, and is now rapidly spreading. 4th Feb., It being necessary to remove a portion of the lower jaw and floor of the mouth in addition to the tongue, the operation was modified. An incision was made from the angle of the mouth outwards as far as the masseter muscle. The lower jaw was next divided in front and behind the molar teeth, and the included portion was removed with all diseased structures as far as the tongue. The tongue was then removed in the usual manner. During the operation there was considerable hemorrhage, and the advantage of the preliminary laryngotomy was well demonstrated. On 15th Feb., a fortnight after operation, the patient was made an out-patient, with the wounds nearly closed.

Case 3.—W. J. S., æt. 53; admitted with a deep epitheliomatous ulcer, involving the greater part of the anterior part of the tongue, and localized to it. Disease first noticed four months ago. Has been a great smoker, smoking more than half a pound of tobacco every week for many years past. 10th Feby. Operation; stump of mucous membrane secured to teeth. 19th Feby. Discharged with the wound healed.

Case 4.—J. S., æt. 68. Extensive disease, involving the whole of the tongue, and extending almost to the epiglottis. There is much difficulty in swallowing, he being unable to take solids. Disease of four months' duration. 17th March, Operation; bleeding slight, only one vessel ligatured. Left the hospital with wound rapidly healing on 28th March.—*Edinburgh Medical Journal*, Aug. 1887, p. 126.

52.—SUPPURATION IN THE ANTRUM—ITS TREATMENT.

By CHRISTOPHER HEATH, F.R.C.S., Hunterian Prof. of Surgery and Pathology in the Royal College of Surgeons, England.

Suppuration in the antrum, or, as it is sometimes termed, abscess, is ordinarily the result of inflammation extending from the teeth to the lining membrane of the cavity; and the disease might, therefore, be not incorrectly termed an empyema, as proposed by Otto Weber. The roots of the first and second molar teeth often, and the bicuspid and canine occasionally, form prominences in the floor of the antrum; and when these teeth become carious, the thin plate of bone covering their fangs not infrequently becomes affected, and disease is set up in the cavity. The fangs of the first molar tooth are occasionally found in health to be uncovered by bone, and to project beneath the lining membrane of the antrum; and, under these circumstances, irritation and inflammation would be still more likely to occur. But an abscess may be formed in the alveolus, and eventually burst into the antrum, though connected originally with teeth not usually in relation with the cavity.

The symptoms of suppuration in the antrum are at first simply those of inflammation of the lining membrane—dull, deep-seated pain shooting up the face and to the forehead, tenderness of the cheek, with some fever and constitutional disturbance; but occasionally the pain is most acute, and of a sharp, stabbing, neuralgic character. A slight rigor may usher in the formation of matter, which will find its way into the nostril when the patient is lying on his sound side, either through the normal aperture or through an opening caused by absorption, as maintained by M. Giralès. An offensive odour is now sometimes perceptible to the patient, though not to those around him—thus differing markedly from what occurs in ozæna—and a sudden discharge from the nostril, when blowing the nose, may relieve all the symptoms for the moment. The more common course of events is, however, that without any acute pain the patient notices that he has a purulent discharge from the nose when blowing it, and perhaps is aware that, when lying down, the discharge finds its way into the throat. This latter point is often overlooked, however, though there may be a complaint of a very disagreeable taste in the mouth and a tendency to nausea in the morning, with a hawking up of pellets of inspissated pus.

With all this there is no distension of the antrum, and it is this fact which frequently misleads the practitioner. It is certain, however, that in health there is invariably an opening between the antrum and the nostril; and that, even when this is closed, the wall is very thin and readily absorbed; and it is quite exceptional, therefore, when the antrum is so distended with pus as to give rise to any prominence of the cheek. Undoubtedly cases

of this kind have been recorded, but it may be doubted whether some of them were not examples of cyst, the contents of which had become purulent; for we know that cysts in the wall of the antrum readily produce great deformity. The natural opening into the nose is not at the level of the bottom of the cavity of the antrum; and hence there is always a small residuum of discharge, which the patient can only partially get rid of by holding the head on one side.

Given a patient who complains of purulent discharge from the nostril, with occasionally a disagreeable smell, the case is too apt to be put down as one of ozæna, and treated by nasal douches, snuffs, &c. But, as already mentioned, the offensive smell is perceived only by the patient, and not by his friends, the reverse being the case in ozæna; and, again, the discharge is only occasional, is determined by the position of the head, and is simply purulent, whereas in ozæna the discharge is constant, and mixed with offensive crusts from the nasal cavities. Again, the dull ache, varied occasionally by acute pain, is apt to be referred to the teeth alone, and the most careful examination may fail to detect any special tenderness in any one tooth. Hence, after exhausting the usual routine remedies for neuralgia, I have known wholesale extraction of useful teeth undertaken with no benefit, unless it should fortunately happen that the tooth which has perforated the antrum should be extracted early, when the discharge of pus at once clears up the nature of the case.

A still more serious result may ensue if the neuralgia should, as it often does, take the form of frontal headache, and thus lead the surgeon to suppose that the discharge comes from the frontal sinus. I have twice been consulted in cases in which enterprising surgeons had proposed to trephine the frontal sinus, regardless of the serious injury to the patient's good looks, for chronic discharge which I proved to be solely due to suppuration in the antrum.

The more ordinary consequence, however, of an unrecognised empyema of the antrum is the damage done to the digestive organs by the constant swallowing of purulent fluid during sleep. Under these circumstances, the patient is always ailing, is unable to take food in the morning, and may be reduced to a state of great prostration even dangerous to life. The usual remedies for indigestion are likely to be of little service so long as the purulent drain continues.

In exceptional cases the pus, not finding an exit, distends the antrum, causing partial absorption of the walls, and thus both bulging out the cheek and thrusting up the floor of the orbit. Under these circumstances, the affection is readily recognised by the peculiar crackling which is perceived when the thinned bone is pressed upon, and the matter, if not evacuated, will shortly find a way out for itself, either by the side of the teeth, through the

front wall of the antrum, or through the floor of the orbit; in either of which cases considerable necrosis and ultimate scar are likely to be the consequences. The possibility of both antra being affected either simultaneously or consecutively must not be overlooked.

The treatment of suppuration of the antrum consists, in the first place, in the extraction of all decayed teeth or stumps in the affected jaw, and with this object in view those teeth which are apparently sound should be tested by a sharp knock with some metal instrument, when, if tender, they should be extracted. If the cause of the mischief be removed in time, the inflammation will subside under fomentation and the application of a leech to the gum; but if matter has formed, it must be evacuated without delay. If the extraction of a tooth is followed by the flow of pus, the enlargement of the aperture in the socket by the introduction of a trocar is at once the readiest and simplest mode of evacuating the matter; but if all the teeth are apparently sound, it will be advisable to perforate the alveolus above the gum with a trocar, gimlet, or strong pair of scissors, and similar treatment would be required in the rare case of suppuration occurring after loss of the teeth in old people. If it be determined to sacrifice a tooth, the first molar is to be preferred for extraction, both on account of the depth of its socket and also because, as mentioned by Salter, it is more liable to decay than the other teeth. In puncturing through the socket of a tooth with a trocar, it is well to gauge the depth to which the instrument may safely go with the fingers of the hands which grasps it, lest injury should be unwittingly inflicted on the orbital plate by the trocar entering unexpectedly, or a trocar with a stop may be employed if preferred.

After considerable experience of both methods, I prefer the puncture above the alveolus, except when a tooth obviously requires extraction, because I find that the aperture is less liable to close up than when made through the alveolus, and because food is less likely to find its way into the antrum. It is necessary, however, not to direct the trocar quite horizontally, but a little upwards, lest in a case of highly-arched palate the floor of the antrum should be injured, as I have known on one occasion, but then fortunately with no permanent damage, except the exfoliation of a minute portion of the palate.

Whatever method may be adopted for emptying the antrum, it is important that the cavity should be thoroughly cleansed by the forcible injection of warm water until it runs freely from the nostril. For this purpose an ordinary glass syringe is quite insufficient, but I have satisfactorily employed an ordinary Eustachian catheter for the purpose, to which an india-rubber injecting bottle is adapted. After a time, and with a little instruction, patients

can learn to dispense with the syringe by forcing a mouthful of water through the antrum by the action of the buccinator muscles. After thoroughly cleansing, some detergent and slightly astringent lotion should be injected to restore the healthy condition of the mucous membrane, and for this purpose weak solutions of permanganate of potash or sulphate of zinc answer admirably; but these cases are exceedingly tedious, as a rule, and take many months for their cure. If the perforation has been made through the socket of a tooth, care must be taken that particles of food do not gain admission to the antrum, and this may be accomplished by plugging the hole with cotton-wool, or, as suggested by Salter, by fitting a metal plate to the mouth with a small tube to fill the aperture, which can be corked at pleasure, and will serve as a pipe for injection.—*Lectures on Certain Diseases of the Jaws: British Medical Journal, June 11, 1887, p. 1258.*

53.—ON THE TREATMENT OF MALIGNANT STRICTURE OF THE ŒSOPHAGUS BY TUBAGE.

By CHARTERS J. SYMONDS, M.S., F.R.C.S., Assistant-Surgeon to Guy's Hospital, London.

[Mr. Symonds narrates four cases of malignant stricture of the œsophagus treated by this method. *Case 1.*—Female, aged 43. The obstruction had existed ten months, during eight of which she was under treatment; for two months by bougies, and for the remaining time by œsophageal catheters. After permanent catheterism was adopted she lived in comfort so long as she attended to the treatment, until the swallowing of fluids produced coughing. This occurred first 40 days before death, and 117 from the first introduction of the short tube. The longest period the tube remained in the œsophagus without removal was 27 days. For three periods of 14, 19, and 21 days respectively the patient was able to swallow without a tube; the closure gradually became complete, however, in each instance. She died from extension of the disease to the lung and pleura. *Case 2.*—A man, aged 51, had had dysphagia for three months, the result of malignant stricture just below the cricoid cartilage. The case lasted six months in all, three of which he was under treatment by tubage. Of these three months he lived with the tube in for five and a half weeks, and after the tube was removed six weeks. The use of the tube kept him alive and well while it was retained. It produced so much dilatation that, after its removal, he was able to swallow solids within a few days of his death, which took place from prevertebral suppuration and exhaustion. *Case 3.*—A man, aged 51, presented all the usual signs of œsophageal obstruction, which was found nine and a half inches from the teeth; the symptoms had existed for three months. This case was under treatment for a month, at the end of which

time death took place from extension of the growths to the trachea. *Case 4* was under treatment at the date of publication.]

It has already been shown by Krishaber, Durham, and Croft, that tubes can be safely worn for long periods, both through the nose and the mouth, with the effect of prolonging life in cases of malignant stricture of the œsophagus.

Krishaber's cases lived 305, 167, 126, and 46 days respectively; Croft's wore tubes for 149 and 108 days respectively, and the case quoted by Mr. Durham had already worn a tube four months.

The tubes used by the surgeons above mentioned were passed through the nose or the mouth, and the food was poured down the tube. The material was the ordinary gum-elastic or black caoutchouc. Dr. Krishaber stated that after a time soft rubber tubes could be passed. This plan has independently been carried out by Mr. Berry, who, in a paper in the St. Bartholomew's Hospital Reports, records cases and describes the method he adopted. Of all materials for long tubes, there can be no doubt that the least irritating in every way is rubber, and I can confirm the statement that ordinary drainage-tube is quite sufficient to maintain dilatation. These long tubes were used, as will have been seen, in two of the cases here recorded, when the swallowing of fluids produced coughing, and, for a time, they answered well, but an evil attending their use, to which attention has not yet been directed, deserves remark. In both cases the patients were at first relieved, and easily fed, but soon the tube caused great irritation and cough, and had to be removed frequently. After death a vertical ulcer was found in the mucous membrane over the cricoid, in both cases, and on the floor of one the cartilage was exposed. The tubes were worn through the mouth, as recommended by Durham and Croft, neither of whom seem to have encountered this effect. As both these patients were troubled much with cough on account of severe lung implication, it is probable that to the frequent and spasmodic movements of the larynx the ulceration was due. Such a result might not have happened had the tube been passed through the nose, as it is kept further back in the pharynx. Again, had a soft rubber tube been introduced, still greater relief might have been afforded.

Short Tube.—In one other case the long tube gave rise to great pain and irritation, partly due to its own presence, and partly to the necessity of constantly ejecting the saliva. It was in connection with this case, fully recorded in the Transactions of the Clinical Society, vol. xviii, that the short tube was suggested to me. In the paper referred to, the tube is illustrated *in situ*. The object of this modification of Krishaber's tube is to permit the patient to swallow and enjoy the taste of his food, while it at the same time substitutes a piece of silk for a tube in the mouth. Four cases illustrating its use are here recorded, and I propose to state the range of its

usefulness, and to record the difficulties and accidents attending its employment. I am also most anxious to learn how far the tube has been found useful by others. I can confirm Mr. Durham's statement that, with care and proper instruments, there is little danger in passing bougies, no accident having occurred in the eight cases I have had under prolonged treatment.

The short tube, about six inches in length, is passed through the stricture till the funnel rests upon its upper face. It is passed on the end of a conical bougie, or by a special introducer of copper wire, which anyone can make. The advantage of the wire is, that the tube can be directed down the posterior wall of the gullet, the trachea being avoided; but it should always be made quite supple first, and tried on a bougie, as a tortuous passage may thus be easily and safely traversed. The silk is looped over the ear, and held by a piece of strapping. The patient swallows down to the funnel, through which the fluids pass to the stomach. The best form of tube is that made on a silk web, and it is essential that the thickness of the wall does not increase in proportion with the increase in size of the lumen, but remains nearly the same for all sizes. This gives a wider channel, and secures softness and pliability, the funnel moulding itself to the shape of the œsophagus, and it is quite stout enough to produce and maintain dilatation of the stricture. These tubes, with the proper silk attached, are well made by Messrs. Down Bros., of St. Thomas's Street, S.E.

The Effect of the Tube.—As Krishaber pointed out, dilatation of a malignant stricture can easily be effected. This is so rapid that, in a week, tubes two to three sizes larger can often be passed. Indeed, it is so rapid that it is always wise to remove and clean the tube once in ten days, for fear it should slip beyond the stricture—an accident that once occurred to me. The first advantage attending this dilatation is that the tube may be removed from time to time, and the patient allowed to take solid food for short intervals. This variation in diet is a great source of comfort as well as of nourishment. It may be urged that this dilatation leads to a more rapid formation of the growth, to which it may be replied that the comfort is cheaply bought.

Its Applicability.—In the case brought before the Clinical Society, the disease was seated in the middle third of the gullet; and it was thought by many that such a tube could not be worn when the disease was high up. I am able to record here a case, in which the ulcer extended downwards from the centre of the cricoid, so that the funnel must have rested against the cartilage, and yet it gave him no inconvenience. In another case, the disease was at the lower end, and here the tube had been worn with great relief and without discomfort, though two to three inches must have been in the stomach. The five cases now recorded are sufficient to illustrate the value of the tube in stricture in all parts of the œsophagus.

This short tube has a limited range of usefulness, for in most cases there comes a time when the lung is involved and the swallowing of fluids produces cough. The funnel being no higher than the stricture, and fluid passing by its side, nearly the same irritation arises as if there was no tube in at all. That this is due to fluid passing by the side of the tube is suggested by the relief afforded on passing a larger one, and by the temporary relief which follows its withdrawal. When this period of the case is reached, we can only relieve by substituting a long tube, preferably of rubber, or by performing gastrostomy, and it can be shown, I think, that Krishaber's long tube will answer well; and since the patient has but a short time to live, it would seem better to continue the use of tubes. My own experience of the long tube is, I admit, unfavourable, and I believe one of my patients would have been more comfortable with an opening into the stomach. I proposed this to her, but she declined until it was too late. The ulceration which occurred in these two cases will, I hope, be avoided in future by adopting the nasal route and using rubber tubes.

Two of the cases here recorded lived twenty-seven and forty days respectively from the time that swallowing fluids first produced coughing, while the original case wore a short tube of large calibre to the time of his death, though his cough was severe and the expectoration abundant. While referring to duration of life, I may mention that we are able to make a prognosis partly upon the duration before complete dysphagia arises, but chiefly upon the character of the breath and the result of examination. A foul breath or foul eructation, and an unpleasant odour communicated to the bougie, are evidences of rapid growth.

Disadvantages of the Short Tube.—As above stated, its applicability is limited, but the comfort and relief afforded when once witnessed are sufficient to justify its use, even for a short time. When expectoration is abundant, the sputa may block the tube, and it will require more frequent removal. The tube may pass beyond the stricture, and we may be unable to withdraw it. In one case, that of T. W., this was due to his attempting to clear the tube by forcible swallowing. It passed beyond the stricture, and on attempting to withdraw it I broke the silk. I at once sent the tube into the stomach by a large bougie, and inserted another. The tube never gave any trouble, and was found at his death, sixty-five days later, in the duodenum, there being no evidence of any injurious effect whatever. This tube was a thick one. The softer ones will probably pass; this happened, in an instance related to me, on the sixteenth day. This accident will be avoided by removing the tube every ten days at least, to clean and if necessary insert a larger, and by directing the patient not to swallow forcibly. Beyond these two disadvantages I do not know any others specially

connected with the short tube. That no ulceration attends the presence of the funnel has been proved now in four cases.

In reviewing the treatment of this form of stricture I would suggest the following plan :

1. So long as solids can be swallowed, let the patency be maintained by the passage of bougies, for neither by tubage nor through the opening formed by gastrostomy can solid food be introduced. Well-stewed tripe, rabbit, and pigs' and calves' feet are swallowed readily.

2. When solids can no longer be taken, a short tube should be introduced. This, when considerable dilatation has been effected, may be removed altogether from time to time, and the patient allowed to take solids. This form can be worn till the case terminates, unless pulmonary symptoms supervene, especially cough on swallowing.

3. When the passage of fluids can no longer be borne, then they must be withdrawn altogether from the gullet. This can be accomplished in two ways: (a) by the use of Krishaber's long tube; (b) by gastrostomy.

The duration of life after this stage has been reached will in no case be long, and it becomes a question of giving the patient the greatest amount of comfort. The experience of others as well as my own shows that long tubes may be worn till the termination of a case; and, as I believe, the ulceration will be avoided by using rubber tubes, and passing them by the nose. To this method I give my adhesion, rather than to gastrostomy. Those who have seen many cases know the difficulty that often arises from escape of the gastric juice, and that not a few have been fed into the peritoneum, while the operation, if done when the patient is in a depressed condition, is very likely to be unsuccessful, either from want of union or exhaustion. Other means are sufficient in the earlier stages.

The most recent advocate for gastrostomy, Dr. Gross, seems to believe that only those cases of malignant disease in which there is no ulceration are suitable for permanent catheterism. To this I may reply that my most successful case had certainly ulceration when first seen; and this condition existed in all the others at a time when catheterism was giving complete relief.

Again, while I think greater caution must be exercised in dealing with disease at the lower end of the tube, it by no means follows that it is impossible, as Dr. Gross suggests, to enter the stomach. I have had great difficulty in traversing the stricture in two cases; but, I believe, with suitable instruments, and a period of complete rest, with the use of sedatives and rectal enemata, most of the strictures will be overcome; and once a tube has been passed and retained, there will be no further difficulty.—*British Medical Journal*, April 23, 1887, p. 872.

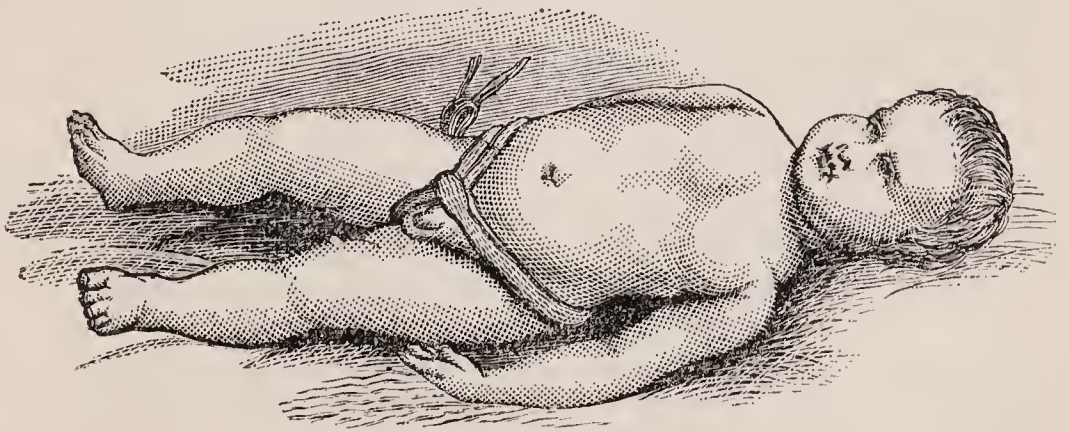
54.—ON AN OLD-FASHIONED METHOD OF TRUSSING RUPTURED INFANTS.

By WALTER PYE, F.R.C.S., Surg. to St. Mary's Hospital, London.

The imperfections of the instruments are so patent, and the difficulty of properly trussing ruptured infants is a matter of such universal experience, that it is not a little curious that a method of treatment so simple and so generally efficient as the use of the woollen or worsted truss, now to be considered, should be still so little known as it is.

My own knowledge of it is derived from hearing Mr. E. Lund describe it in his Hunterian Lecture in 1885 (Churchill, 1886, p. 48), as an old and efficient treatment. Following up the reference he there gives, it will be found that the original account is given by William Coates, of Salisbury, who in the Medical Times for 1848 describes the proceeding as one employed by a "gude wife" in his neighbourhood, and says that its excellence is such that it is his duty to make it generally known. He states that the result of extensive trials has been uniformly a radical cure of the disease, and that it consists simply of a skein of Berlin wool, or, for infants, lamb's wool; this encircles the pelvis, one end is passed through the other at a point corresponding with the inguinal ring; the free end is carried between the thighs, and is fastened behind to that portion which forms the cincture. He says, further, that "This simple and cheap contrivance can be worn during the morning and evening ablutions, and then changed for a dry one. No attention is required on the part of the nurse, except at the moment of changing, and with ordinary care the skin is never galled."

Mr. Lund's description (*loc. cit.*) is, it will be seen, similar, but more particular. Worsted known as Berlin wool is made into a skein of twenty threads, which, stretched out straight, shall be about twenty-two inches long, the threads being tied across at



intervals of two or three inches, to keep them together. One end of the skein is placed over the abdominal rings. The folded worsted is passed horizontally across the abdomen, over the line of the crest

of the pelvis to the opposite side, round the hips, behind the pelvis and over the hip on the side of hernia. The folded end is then passed through the loop of the skein, and will here form a knot or bulged portion, which must be carefully adjusted so as to lie against the hernial opening, and, being carried down the upper part of the thigh between it and the scrotum (in the male), it is brought round the external side of the thigh near to the great trochanter, and there tied or fixed with a safety-pin to the band of worsted already round the pelvis."

Inasmuch as ever since I heard this description I have used this method (with some slight modifications which I shall mention) of trussing infants, without, I think, a single exception, and as I have on no occasion felt tempted to revert to a more mechanical form of support, I ventured some few months back to ask Mr. Lund whether I might put on record from my own notes the results both as to the successful restraint of the hernia and the proportion of permanent cures. I asked him, also, whether he had any further suggestions which might be of help to me. Mr. Lund wrote to me in reply:—"You will note that I was very careful to give the credit to the originator of the plan, but for years past—I almost think since the notice first appeared—I have referred to it in my surgical lectures and demonstrations. However, in spite of this, I have frequently had letters from old students, or from practitioners to whom I had shown the plan, asking how it should be done, they very generally getting 'muddled' as to the position of the loop or the length of the skein. I am glad you have found out a good quality of worsted which will wash and wear well, as I know this is a desideratum."

Mr. Lund also kindly offered me the use of the block for the accompanying illustration, which comes from his published lectures.

With regard to my own experience of the method, I find that I have employed it in altogether seventy-three cases, the ages of the patients ranging from three weeks to five years. The ruptures were in all cases inguinal. There were four apparently ovarian, and in two only was there a rupture on both sides. As to the retention of the rupture by the truss, I know of four cases only where it failed. One of these was the case of a syphilitic infant four weeks old, with a double inguinal and an umbilical hernia, which died of mal-nutrition and marasmus a week after she was brought to the hospital. Another was in a child five years of age, with a large hernia which no truss had retained, and for the cure of which a radical operation was afterwards performed. In the other two cases the mothers did not seem willing to undertake, or mentally capable of understanding, a manœuvre in itself as simple as most other stages of the dressing of a baby.

On the other hand, in one case of a child five years old, sent up to me for an operation for radical cure in consequence of repeated

failures in trussing, the worsted skin retained the rupture perfectly, and a cure soon resulted. It must be allowed, however, that the number of failures may be a little larger than my record shows, for, of the total number, eight did not appear in my out-patient room after the first time, so that for them I can only speak to the fact that at the time of first application the worsted appeared efficiently to restrain the descent of the rupture. In all of the sixty-one remaining cases the skein truss was found to be a permanently efficient method, except in the other case of double rupture, in which the two skeins which were required, although they retained the herniæ, were too cumbrous and awkward.

With regard to the question of cure, it is, I suppose, within the experience of every surgeon that, if a rupture in an infant be properly and continuously retained, it will almost always disappear—generally very quickly—unless some persistent cause favouring its descent, such as phimosis, obstinate cough, as in whooping-cough, calculus, &c., be allowed to persist. This is certainly borne out by those of the sixty cases which I have been able to follow up, and, excluding those who were first trussed later than three months ago, out of twenty-one answers I have received, in nineteen the rupture is reported as never coming down now.

There are certain points of detail in which my own experience is not quite in accord with Mr. Lund's, and to which it may be worth while drawing attention. First, a good deal depends upon the kind of wool, or rather of worsted, employed—for, although the two words are often used indifferently, wool and worsted are not the same things, the latter having a much greater twist. Real Berlin wool I have found not to wear well; it does well enough when new, but spoils in one or two washings. "Alloa yarn" or "five-ply fingering" (Peacock brand), on the other hand, are improved for the purpose of these trusses by washing, and they are not too harsh for the skin of any except the tenderest infant, in whose case a skein of "lambs' wool" does best.

Nothing except wool or worsted seems to act as an efficient truss when applied in the same way; this is due, no doubt, to the elasticity of the animal fibres, which is distinct, although limited. In some cases in which the ruptures were large, and occurred in children between three and five years of age, I have found it useful to increase the elasticity by using, instead of the simple skein, a loop of the same material loosely knitted, or crocheted into a flat band about two inches wide, and applied in the same fashion.

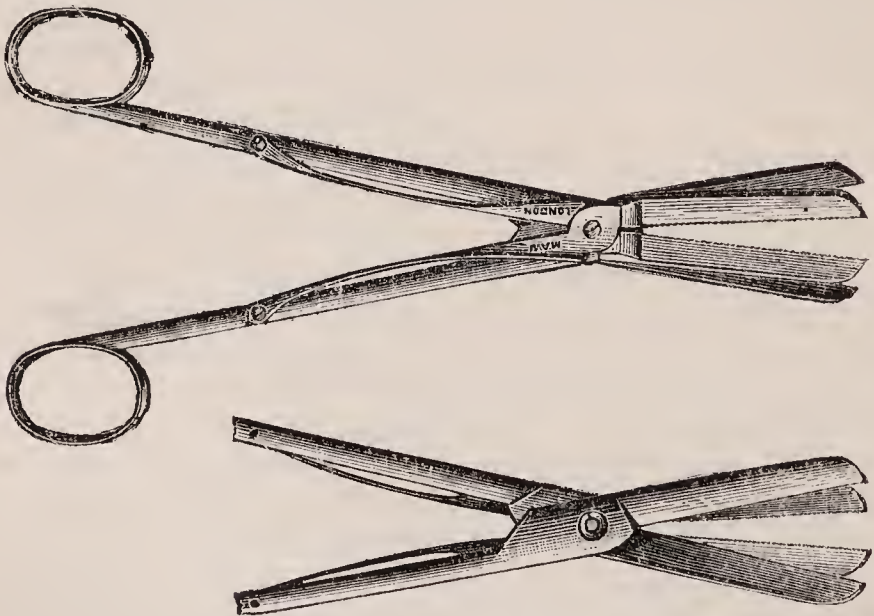
I doubt whether a skein of twenty threads only, as Mr. Lund advises, will be found thick enough, except for very small infants, and I have sometimes found it necessary to use as much as double that number. It must be clearly understood that no pad of any sort is to be worn underneath the loop. Nurses often make this mistake; indeed, as to the whole method, some little patience will

be called for in order to secure that it shall be carried out intelligently, or disappointment will surely ensue. But this patience will not be thrown away if the end is gained of saving mothers from the endless worry and expense which a ruptured infant so frequently entails upon them; and if I seem to have been needlessly particular as to details, it is because I am convinced of the value of this old-fashioned treatment, and am anxious that it should not get discredit from lack of fulness of description.—*British Medical Journal*, May 28, 1887, p. 1152.

55.—A SCISSORS-CLAMP FOR EXTERNAL HEMORRHOIDS,
AND OTHER SMALL TUMOURS.

By FRED. A. A. SMITH, M.D., C.M., Cheltenham.

It has long been the aim of surgeons to devise an instrument that would cut and clamp by the one single movement of the finger and thumb. Such an instrument I have endeavoured to place before the medical profession. Its action is self-evident, and requires no explanation. The simplicity of the instrument at once strikes the observer; nevertheless, it has taken eight months' hard working out. The great difficulty found in practice was to get the clamp to work and clamp throughout its entire length before



the scissors-blades began to move. With the instrument as it now is this has been accomplished, the clamp being firmly closed before the blades of the scissors begin to move. Anyone requiring it can have a rack fixed on the handles, so as to fix the clamp action without holding the instrument. It has been made for me by Messrs. Maw, Son, and Thompson, Aldersgate Street, London. The instrument is elegant in form, light in weight, and very powerful.—*Lancet*, April 16, 1887, p. 784.

ORGANS OF URINE AND GENERATION.

56.—ON THE MODE OF OPERATING FOR THE REMOVAL OF THE KIDNEY BY THE TRANSPERITONEAL METHOD.

By FREDERICK TREVES, F.R.C.S., Surg. to the London Hospital.

[The following valuable description of the circumstances which attend the opening of the abdomen, is taken from a clinical lecture upon a case in which the kidney and both ovaries were removed, with complete success.]

There is nothing special in the preparation of the patient, and there is no precaution required in ovariectomy that ought not to be taken in any other operation of any magnitude. The patient lies with his arms folded behind his back, and needs to be held by no kind of apparatus. All parts of the body are warmly covered; the lower limbs are enveloped with a small blanket, and are then packed, as it were, in a mackintosh. The ordinary mackintosh, with a hole, is used for the abdomen. Every trace of blanket or flannel should be covered up. In the gap between the thighs and the buttocks several sponges are packed, so that if any fluid runs down over the pubes it is at once absorbed. All the water used in the operation is carbolised; all the sponges are kept at a temperature of about 100° by the "sponge warmer." While the abdomen is actually open I use a carbolic spray. It is used partly at the dictate of a kind of surgical superstition and partly for this reason: the abdominal walls are flaccid, and after the removal of a tumour, and during the introduction or withdrawal of the hand or sponge, considerable volumes of air must enter the abdomen, and it is well that the air should be as pure as possible.

With regard to the actual incision, it must be remembered that there is no linea alba below the umbilicus. Unless the muscles are separated by distension the knife will open one or other rectus sheath. The abdomen should be opened by precise, clean cuts; a director is an abomination, and the practice of deepening the wound with the fingers belongs to the surgery of past ages. Before the intra-abdominal operation is commenced a large sponge is placed in Douglas' pouch, and left there until the abdomen is ready to be closed. In removing the kidney the inner layer of the mesocolon will have to be divided. In that layer the vessels to the bowel run, and are very easily wounded. This especially applies to the inferior mesenteric vessels on the left side. In this and like operations a Trouvé's electric lamp is very useful, and saves much vague groping about within the peritoneum. In the process of removal it is scarcely possible to avoid actually tearing the serous membrane that covers the kidney. The rent made need not be closed, and the peritoneum appears to fall easily together. When much blood or fluid has escaped into the peritoneal cavity during the operation, it is much more readily got rid of by really washing

out the abdomen than by the laborious and possibly damaging process of sponging. The assistant holds up the flaccid parietes by means of the wound edges, and the surgeon then pours in many pints of slightly carbolised water at a temperature of 100°. In this water the intestines can be rinsed. The water is allowed to flow off until it runs clear. A simple arrangement of the mackintosh allows it to drain away. The pelvis is then sponged out. Finally, the patient is slowly and carefully raised almost into a sitting posture, and the fluid that has collected among the intestines and in the pockets about the loins can gravitate into the pelvis, from which it is removed by sponging. The last sponge introduced should come out dry and clean.

In adjusting the incision the edges should be kept tight and parallel with one another by means of large blunt hooks inserted at either extremity of the wound, and held tightly by an assistant. The incision is then made an even cut, and parts that were in contact before the operation come in contact again after the sutures have been completed. By means of the hooks, also, the parietes are drawn away from the viscera during the process of suturing. Upon the intestines lies a very thin flat sponge. It absorbs the last drops of blood that may come from the wound during the application of the sutures. It is drawn out just before the last two sutures are tied, and is thus made to wipe the peritoneal aspect of the wound. The only dressing I ever employ is a single large sponge well dusted with iodoform and secured over the wound by a gauze bandage. Before the bandage is applied, an extensive packing of loose soft gauze is made around the sponge, which is thus retained in position. The sponge exercises pressure upon the part, absorbs any discharge, and soon becomes dry. The gauze fills up the abdominal hollow and the depressions about the groins. Over all is a flannel binder that is accurately shaped to the body and is held firmly down by two pieces of flannel that pass along the perineum and around the thighs, and have either of their ends secured to the binder. If these thigh pieces are properly applied, it is hardly possible to work the finger beneath the binder in the region of the pubes. The wound is thus well protected in the most dangerous quarter. The sponge is easily cleaned after use, and may be employed over and over again. The dressing therefore is not expensive. This dressing is not disturbed until the sixth day, when it is removed and all the sutures are taken out. The wound is then supported by harelip strapping. This strapping is especially prepared, is fenestrated, and cut into strips that interdigitate. It keeps the wound together, but at the same time does not prevent any discharge from escaping, and any portion of the strapping can be readjusted without disturbing the rest. The sponge is replaced by iodoform gauze.

The general after-treatment requires no comment, and is

founded upon the simplest principles of therapeutics. On the second day warm fluids appear more acceptable than ice. After the removal of the kidney the patient sometimes remains low and dull, and is troubled with a somewhat persistent vomiting. The urine will generally be found in such a case to be of high specific gravity—1025 to 1040; and the symptoms probably are of renal origin. Under the circumstances, the greatest relief is afforded by a hot-air bath. This can be administered as the patient lies in bed without disturbing her in the least. It promotes profuse perspiration, and its use has been attended—in the few cases in which I have employed it—with most satisfactory results.

One small point remains. There is a risk after abdominal operations of a ventral hernia forming at the seat of the wound. To prevent this a strong abdominal belt is sometimes ordered. Such a belt I have never allowed a patient to wear. The ventral hernia is due to a weakening of the abdominal parietes. That wall is composed of muscular and aponeurotic tissues, and its strength will depend upon the state of development of the muscles. Muscle can only be made strong by use. If a belt be worn, the responsibility of supporting the viscera is thrown, not upon the abdominal muscles, but upon the instrument. The muscles are not encouraged to act. They are in the same position as the biceps when the arm is carried in a sling—wasting from disuse. To prevent a ventral hernia the patient should not be allowed to get up too soon. A month in bed is not an unreasonable time. She should not get up until the wound is sound. She may wear a light flannel binder for a few weeks after she is about again, but at the end of that time she should discard supports of all kinds. I am speaking, of course, of an ordinary case. With an abdominal wall already much weakened, loaded with fat, and pendulous, a substantial support may be needed.—*Lancet*, Sept. 24, 1887, p. 603.

57.—ON NEPHROTOMY AND NEPHRECTOMY.

By HENRY E. CLARK, Surgeon to the Glasgow Royal Infirmary.

[Mr. Clark's paper opens with a detailed narrative of a case in which he successfully performed nephrectomy, following upon nephrotomy, and upon which, as a text, he bases his subsequent remarks upon the operations for surgical diseases of the kidneys. The patient was a woman, aged 26 years, who had suffered from typical symptoms of suppurative disease of the left kidney for seven months before she came under his care, on November 24th, 1885. On December 23rd, Dr. Newman verified the diagnosis of suppurative disease of the left kidney, by means of Pawlik's uretal catheter, being able to demonstrate conclusively that the pus found in the urine was escaping by the left ureter only. (This procedure was successfully repeated by Mr. Clark himself subse-

quent to the performance of the nephrotomy, and previous to the extirpation of the kidney eight months afterwards.) On Dec. 29th, a painful swelling was felt beneath the left floating ribs, and fluctuation was evident when one hand was placed in front and the other behind. On January 4th, 1886, the kidney was exposed by an incision as for colotomy, and 20 ounces of pus evacuated from the interior of the organ. There was no evidence of calculus. The cavity was washed out with corrosive sublimate solution (1 in 1000), a drainage tube inserted, and the wound covered with sublimate gauze and wood-wool. The patient made a good recovery from the operation, but three months afterwards a sinus still remained through which urine escaped, and the temperature curve was of the hectic type, clearly showing that total removal of the diseased organ could be the only effectual cure. It was determined to postpone further operative interference for some few months, with a view to effecting such improvement in the patient's general condition as might be possible. In the meantime it was concluded that the case was one of scrofulous kidney, and that other abscesses than the one already opened existed; probably most of the secreting structure of the left kidney was destroyed. The lungs were sound, the other kidney was apparently healthy, and there seemed every probability that if the diseased organ were removed the patient would recover her health and do well. On Aug. 27th, 1886, the kidney was removed by a lumbar incision placed a little above the opening of the old sinus, and was more transversely directed than the nephrotomy incision. The organ was easily separated from its capsule, but not without causing considerable hemorrhage, which was only arrested by ligature of the renal artery in the pedicle of the organ. The patient recovered from the operation, and in November the sinus remaining from the incision had closed, and the urine was in every respect normal. After reference to Gross's statistics, which show a mortality of 40 per cent. in cases of strumous disease treated by the radical operation, and to the great use of catheterization of the ureter in determining the condition of the other kidney, Mr. Clark proceeds as follows:]

A question which has been much discussed now suggests itself. Is it best to perform (as I did here) a preliminary nephrotomy, or should the kidney be at once removed when the true nature of the affection is ascertained? In the twenty cases cited above, previous nephrotomy had been performed in eight cases, and in these the mortality from the subsequent nephrectomy was 4 per cent. less than where extirpation was done as a primary operation. But in no case was any real relief afforded by the incision, and I cannot call to mind a single recorded instance of a cure resulting from nephrotomy alone in scrofulous kidney. If a large abscess cavity exists there is no doubt that the evacuation of it, and the con-

traction which follows, allows of extirpation by a smaller wound than would otherwise be required, and that there is less risk of peritoneal adhesions, and consequently less risk of wounding that structure. It is seldom, however, that one large cavity exists, commonly there are several smaller ones; the contraction, therefore, is slight, and the evacuation of one such cavity does not materially affect the rest. Moreover, the long continued drain from the sinus formed offers a serious menace to the health of the other kidney, and the time lost may have been occupied by tubercular deposit taking place in other organs. As Gross says:—"It appears as if previous incision might be wisely refrained from, and the kidney be extirpated in the early stage of tubercular disease, especially as excision may relieve the patient of a source of general infection." Yes, that is very good! But on what are we to base a sufficiently secure diagnosis to justify so bold a procedure? There is nothing in the early history of the disease whereby it is possible to distinguish scrofulous pyelo-nephritis from that due to renal calculus, while in the later stages extirpation is often out of the question, and incision the only possible treatment. It is true that in the intermediate stage caseous masses are occasionally found in the urine, but their extreme rarity makes them of little value in a diagnostic point of view. Now in renal calculus nephrotomy is not only justifiable, it is in most cases an effective cure, for if the kidney is incised and the calculus removed, the kidney will recover, and the sinus after a time probably close. In the present state of our knowledge, then, I doubt if it would be justifiable to remove a kidney, however strong might be the presumptive evidence as to the disease being scrofulous, without first opening the abscess and ascertaining that there was no calculus present. But having ascertained by incision and the use of a probe that no calculus was present, it would be quite the right thing to do to perform nephrectomy at once, and so avoid the risks of a long discharging cavity.

Another point on which opinion is still divided relates to the comparative advantages of the lumbar or ventral incisions. The mortality after the lumbar operation for scrofulous kidney is, according to Gross, 53·84 per cent., while that from the ventral operation is only 14·28 per cent.; but the same statistician tells us that taking nephrectomies for all causes, the mortality is 50·83 per cent. for the ventral, and 36·93 per cent. for the lumbar. There is here a curious discrepancy, which is probably the result of the smallness of the figures for nephrectomy in scrofulous kidney; for we know of no reason why in these cases it should be more advantageous to open the peritoneal cavity and displace the intestines, than to operate, leaving them untouched. Notwithstanding all the liberties that have in recent years being taken with the peritoneum, I am sufficiently old fashioned to regard

more favourably an operation which respects its integrity in the removal of an organ lying clearly behind it, than one which divides it both in front and at the back of the abdomen, and my surgery is sufficiently antiquated for me to still value a good dependent opening for drainage of the wound. Certainly, in my case, the lumbar wound gave us quite satisfactory access to the kidneys, and we were able to reach the pedicle without undue traction.

Being anxious, if possible, to combine the advantages of the two methods, I made some experiments on the dead body as to the feasibility of making an incision along the outer edge of the rectus muscle, down to the peritoneum, and displacing this membrane with the abdominal contents inwards, so as to raise it from the front of the kidney. This I accomplished without difficulty, but found that the antero-posterior depth of the abdomen was so great that a very large wound was required, and the kidney was so far from the surface wound that it was very difficult to reach the pedicle and apply the ligature, and quite impossible to bring the organ to the surface till the pedicle was divided.

The incision which gives freest access to the kidney in the lumbar region is very nearly the same as that made in lumbar colotomy, being, however, a little more transverse; while it facilitates removal of the organ to keep as near to the lower border of the last rib as possible (especially on the left side, as the kidney is higher up than on the right). We must not forget that Lange has shown that in many instances the pleura comes below the level of the last rib, and that there is consequently a real danger of injuring that structure. If, however, a good half inch is left between the incision and the rib, there will be no such danger, and further space can be gained by getting an assistant to draw the lower ribs upwards, so as to uncover the upper end of the kidney.

In properly selected cases, the operation of nephrectomy is both valuable and safe. In the selection of such cases wide knowledge and much discrimination is required; hitherto our experience has been tentative rather than assured; and if the surgeons present can add some little to the sum total of our knowledge, neither the reading of this paper nor the discussion will have been in vain.—*Glasgow Med. Journal*, May, 1887, p. 330.

58.—ON SOME IMPORTANT POINTS IN THE TREATMENT OF DEEP URETHRAL STRICTURE.

By F. N. OTIS, M.D., Clinical Professor of Genito-Urinary Diseases in the College of Physicians and Surgeons, New York.

[The narrative of an illustrative case, and some quotations from Sir Henry Thompson's works, have been omitted for want of space, in the following reproduction of Dr. Otis's important paper.]

In regard to the locality of urethral strictures, it may be broadly stated that they are important in proportion to their distance from the external urethral orifice; and, again, that strictures at any point anterior to the bulbous region are, to a great extent, free from the chief difficulties and dangers which may attach to strictures located in the deeper portions of the urethra. It is fortunate, therefore, that we find by far the greater proportion of urethral strictures situated in the penile portion of the canal—a fact which is reasonably explained and corroborated by the well-known greater frequency, severity, and persistence of inflammations in this locality.

Careful examination by means of the urethrometer and the bulbous sound, in more than one thousand cases which I have examined critically, has shown that less than 10 per cent. were found at a point beyond four inches from the urethral orifice. Through similar examinations by means of the urethrometer and the bulbous sound in any case of stricture, their presence as well as their exact locality may be readily demonstrated, and thus the distinction between cases of much or little importance may be absolutely determined. Notwithstanding this, it is still a common practice to make the diagnosis of strictures through *symptoms* alone, and to treat them by dilatation—not infrequently by division, without any knowledge of their exact location. For instance, a man comes to the surgeon complaining of a persistent gleet: the presence of stricture at some point in the urethra is naturally inferred; a flexible bougie or steel sound of the size of the urethral orifice is introduced, and, if it can be made to traverse the entire canal and passed well into the bladder, the first step in the treatment of stricture by dilatation is successfully initiated, and then a course of dilatation is carried out, without the least practical reference to the exact locality of the stricture. The stricture for which this procedure is initiated may be, and often is, confined to the anterior urethral orifice or its near vicinity, and yet the dilating instrument is carried not only through the entire penile urethra, which is usually very tolerant of unnecessary interference, but through the membranous and prostatic portions of the canal, where alone the greatest dangers of gradual dilatation reside.

In cases practically identical with those above referred to, where the strictures were of large calibre and in the penile urethra alone, I have known the passage of the flexible bougie or sound to produce epididymitis in many instances, in two cases going on to orchitis and abscess, with complete loss of the testicle in each; in other cases urethral fever, in several with suppression of urine; acute prostaticitis often, with prostatic abscess in two cases, one of which was in a surgeon of some distinction, and where the stricture was within one inch of the external urethral orifice. In other cases acute cystitis has resulted. All the above-mentioned acci-

dents would have been avoided had the exact locality of the stricture been determined previously to the inauguration of the treatment, and this confined to the immediate locality of the stricture.

Again, in cases where difficulty in urination constitutes the chief symptom of stricture, and only small flexible instruments can be passed, the same mode of procedure is not uncommonly practised—the surgeon recognising, perhaps, that the obstruction to the passage is in the deeper urethra, but overlooking entirely the presence of anterior contractions of greater or less calibre which are potent to produce spasmodic contractions of the membranous portion of the canal, which may perfectly simulate close organic stricture at this point.

It is especially true of strictures of small calibre in the deeper portion of the urethra—say at from a quarter to one and a half inches anterior to the bulbo-membranous junction—that, in using the small flexible bougie, the instrument, after passing the above-mentioned strictures, is again arrested at a deeper point, and yet is finally made to pass on into the bladder, though often closely hugged. It is in just such cases as this, and they are not infrequent, that the surgeon, satisfied that there is a close, deep organic stricture *beyond the bulb*, resorts to the urethrotome of Maisonneuve, or possibly performs an external perineal urethrotomy, on a diagnosis based upon information afforded by the small flexible or filiform bougie alone. It is, however, of the greatest importance that the error should not be made of mistaking for an organic stricture of the deeper urethra a spasmodic stricture caused by an organic stricture in the bulbous urethra. It is in just such cases as that above described that the preliminary and careful use of the *bougie-à-boule*, or the bulbous sound, becomes imperative, as it will not infrequently put an entirely different aspect upon the difficulty by revealing the presence of one or more linear strictures immediately anterior to the bulbo-membranous junction, on the removal of which, a full-sized sound may be made with ease to pass into the bladder.

It has been my experience to meet with several cases where close organic stricture in the bulbous urethra presented all the characteristics of true stricture of the membranous portion, and where operative measures, rigidly confined to the urethra *anterior to the bulbo-membranous junction*, have sufficed to remove all evidences of stricture *beyond that point*. The cases of urethrismus, or chronic spasmodic stricture, previously reported by me during a discussion of that subject in the Hospital Gazette, June 28, 1879, and subsequently, were shown to be due to the presence of strictures of *large calibre* in the *penile urethra*. Strictures which have been demonstrated by means of the bulbous instruments in the immediate vicinity of the bulb were formerly accepted by me as

deep organic strictures, and operated on either by external urethrotomy, or by the use of the urethrotome of Maisonneuve, as I do not consider the amount of cutting sometimes necessary to completely divide the stricture by dilating urethrotomy justifiable in the deep urethra, or beyond a point where any resulting hemorrhage can be readily controlled by external pressure. It is, however, possible that many cases which present the usual evidence of deep organic stricture may, through careful exploration with small bulbous instruments, be relegated to the much less important class of strictures anterior to the bulb.

It will sometimes occur that strictures may be traversed by filiform instruments, and can be located by very delicate bulbous instruments, but where the calibre of the stricture is too small to admit the smallest guide bougie of the urethrotome of Maisonneuve. In such cases, where immediate operation has become necessary, the only resource is an external urethrotomy. For aid under such conditions, I have had constructed, and have frequently used with much satisfaction, a miniature Maisonneuve, of scarcely more than half the size of the ordinary instrument, carrying a blade of not more than three or four millimetres breadth. This, with due care, may readily pass a stricture where no other cutting instrument can, and subsequently the ordinary-sized urethrotome of Maisonneuve may be readily entered. This little instrument in my hands has, in repeated instances, saved the patient an external urethrotomy, when without it such an operation would have been unavoidable. Some time since, a patient presented at my clinique at the College of Physicians and Surgeons, who was reported to be the subject of an impermeable stricture. On careful exploration, several strictures of large calibre were found in the penile urethra, and one at about five inches, which was defined by No. 6 bulbous sound, two millimetres less in size than the shaft of the ordinary urethrotome of Maisonneuve. The miniature instrument was introduced, and the deep stricture divided so that the ordinary instrument was easily made to follow. With the latter, room sufficient for the introduction of my dilating urethrotome was secured, the deeper as well as the anterior strictures were fully divided, and, with no cutting beyond five inches and a half, a steel sound thirty-two millimetres in circumference, was passed easily into the bladder. I do not fail to appreciate the fact that such cases as I have recited are quite exceptional. I believe they would be found to be much less so, if the means of diagnosis which I have described and advised were more generally adopted.

Permanence of results after operations on deep strictures depends, as in the case of anterior strictures, upon completeness of division. Complete sundering at some point is essential to radical cure. The reason why the results of division of deep strictures by perineal section are often but temporary, is because most com-

monly the anterior strictures are not also divided. Without this, the full size of the urethra in the perineal portion cannot be kept up until the healing of the perineal incision; hence re-contraction sooner or later is inevitable.—*New York Medical Journal*, Feb. 19, 1887, p. 197.

59.—ON THE OPERATION OF INTERNAL URETHROTOMY
AND THE INDICATIONS FOR ITS USE.

By G. BUCKSTON BROWNE, M.R.C.S., London.

I wish to show that, while in the treatment of stricture, internal urethrotomy should be the exception and not the rule, still there are certain cases where it is unquestionably the only remedy; that it affords us really brilliant results in otherwise miserable and, perhaps, hopeless cases of disease; and that, with certain precautions, it may be made as safe as almost any operation in surgery.

In the first place, I would briefly state what I mean by the treatment of urethral stricture by internal urethrotomy. I mean the free division—no scarifications, no nicks, no multiple incisions—but one bold free stroke of the knife through all the fibres of the stricture in the floor of the urethra, since almost invariably the induration is most marked there. I maintain that this can only be done by an instrument which becomes practically a long knife in the operator's hand, and which is entirely under the control of that hand, subject to no mechanical restrictions whatever, and cutting, much or little, when and where, just as the surgeon's tactile sense informs him is necessary. When making an accurate incision into any part immediately under the eye, or, for instance, in carving wood, we instinctively cut towards ourselves, or else from left to right, the hand thus being most appreciative; so in cutting a stricture I prefer to cut from behind forwards, or from left to right, and the instrument which permits of this, and at the same time is simply a knife and nothing more, is the urethrotome usually credited to Civiale, and always recommended and used by Sir Henry Thompson. The blade is protruded beyond the stricture, and then drawn forwards, the stricture divided, the blade then sheathed, and the instrument withdrawn. I do not claim for internal urethrotomy that it is capable of effecting a radical cure of stricture, although I would not deny that very occasionally it may do so, but, with practically no exception, the periodical use of a bougie is necessary after the operation.

With reference to the special dangers of an incision into the urethra, in the first place, hemorrhage is rarely severe if the incision is only made through the dense stricture tissue. It is practically always controlled by tying in a large catheter (10-13 English) for twenty-four to thirty-six hours. I have never known a case lost from this cause, although I have certainly two or three times

known the bleeding very severe. Two years ago I was called to see a case where a surgical friend had performed internal urethrotomy, and where the bleeding was severe enough to threaten life. No catheter was tied in, but Otis's perineal tourniquet had been applied, and as long as its pressure was maintained all was well, but when the patient wished to micturate, the tourniquet had to be unscrewed and blood flowed freely. I removed the tourniquet, tied in a firm English gum catheter, put on a perineal pad, and applied pressure by means of braces and bandages, and in a few days all was well. Urinary fever is largely controlled by opiates, and need excite no anxiety if the patient is only in fair renal health to begin with. Extravasation of urine and abscess are prevented by extreme accuracy in the adjustment of an inlying catheter after the operation, and by careful nursing. When a desire to pass water is felt, the nurse simply removes the catheter plug, and the patient is desired to make no effort to micturate, but simply to allow the urine to flow out. There is no operation after which the surgeon's presence is more constantly necessary for the first four or five days. It is always well for the patient to lodge close to the operator, so that the latter's visits may be made frequently, and the catheter kept accurately in place.

All forms and results of blood-poisoning—pyæmia, septicæmia, phlebitis, embolism, and thrombosis—may follow an incision into the erectile tissue of the penis; but they are, fortunately, excessively rare, and are only mentioned that my account of the difficulties which may occur after internal urethrotomy may be complete. In connection with this subject, it should be mentioned that it is highly dangerous to incise a urethra before every trace of gonorrhœal infection has disappeared.

I now proceed to consider the cases of urethral stricture where internal urethrotomy should be performed. They are arranged in ten groups. In some the operation is absolutely indispensable, and in all it is by far the most desirable of all methods of treatment.

1. When time is an object. The patient is perhaps ordered on foreign service, or perhaps, on the eve of marriage, finds that he is the subject of stricture.

2. When the stricture is at the urethral orifice, or in the penile urethra, it will not yield permanently to either continuous or interrupted dilatation, but must be divided.

3. In cases of stricture where the gentlest instrumental interference is followed by rigor and great prostration. If the fibres of the stricture are freely divided, the use of a bougie will cease to be followed by rigor. If, after internal urethrotomy, the use of a bougie is still followed by rigor, it will be because the operation has been incomplete, and it must be repeated more thoroughly.

4. Internal urethrotomy is required when a stricture rapidly re-contracts after dilatation. Such strictures are called resilient.

5. Also, when the deposit round a stricture is obviously large and dense, dilatation is useless, and the stricture must be cut, and sometimes requires more than one cutting operation before a satisfactory result is obtained.

6. When renal or other calculus is impacted behind a stricture, the stricture had better be divided internally, and, if possible, the calculus extracted *per vias naturales*; should this prove impossible, the calculus may be cut down upon, and the division of the stricture and subsequent treatment will prevent the opening made becoming fistulous.

7. No urethral fistula will ever heal as long as the urethra is contracted in front of the fistulous urethral orifice. Divide the stricture, and keep it open by periodical instrumentation, and usually the fistula will close.

8. For stricture complicated by prostatic enlargement.

9. I have stated elsewhere (Lancet, November 10th, 1883) that when about to perform lithotripsy through a strictured urethra, I prefer to dilate with steel bougies rapidly, when the patient is under the influence of ether, since an internal urethrotomy wound is likely to become torn and bruised by the lithotrites and tubes, and to become filled with calculous *débris*. But there are cases of stone in the bladder where internal urethrotomy is an incalculable boon to the surgeon. Nearly three years ago a gentleman, aged sixty-five, who for years had suffered from stricture, consulted me in a pitiable plight. Twelve months before he saw me, he had had extravasation of urine, and perineal section had been performed. The wound never healed; he had made no water by the penis for six months; all was by fistulæ, some over the pubes, some in the scrotum, and not only this, but he was obliged to micturate every one to two hours, and each act was accompanied by agonising pains. I suspected vesical calculus, but was puzzled how to make my diagnosis, as no instrument could be passed into the bladder. However, I put the patient under ether, and then managed to pass my finest silver catheter into the bladder; withdrawing it, I then succeeded in passing Nos. 1, 2, 3, 4, and 5, and then my urethrotome, with which I divided the stricture. The bladder could now easily be sounded, and it was found apparently filled with calculus. Owing to the internal urethrotomy, a lithotomy staff could easily be passed, and I then and there performed perineal lithotomy, removing a phosphatic calculus of more than one ounce in weight when dry. He made a good recovery, and all the fistulæ healed.

10. I now conclude my instances of the value of internal urethrotomy by drawing your attention to its application in the treatment of perineal abscess when urethral stricture co-exists. I am not aware that attention has before been drawn to this point, which is one of great practical importance. A patient afflicted

with a tight stricture, sometimes without definite cause, but usually after excessive or rough instrumentation, finds himself very unwell. His perineum is hard, tender, and throbbing, and he may or may not have a rigor. We all know that a perineal abscess is in process of formation. All surgeons open such an abscess at once, giving vent usually to a large quantity of matter; in a few days urine is passed by the wound, and, unless the stricture is attended to, a permanent urethral fistula remains; usually the stricture is leisurely attended to by dilatation, and even then the fistula is often obstinate, and a source of annoyance to the patient perhaps for years. I freely divide the stricture from inside the urethra, pass a 15 or 16 (Eng.) steel sound, and tie into the bladder a No. 12 gum catheter *per penem*. I then put the patient into the lateral lithotomy position, and, with my left forefinger in the bowel, I introduce a sharp narrow knife into the perineum, half-an-inch above the anus. I go straight in until pus issues, and then withdraw, and in withdrawing divide the skin upwards a little, so that the finger can follow the knife; the finger dilates the opening, and finds a large cavity full of pus, with the urethra filled by the catheter lying above, almost, as it were, dissected away from the surrounding tissues. As a rule, this one opening will suffice to drain the abscess, but I have had to make a more dependent opening in the buttock. The catheter should remain in about three days. I have operated in this way upon three cases; the patients were up and about in less than a fortnight, and no urine was ever seen by the perineal opening. In fact, the ease and quickness of the recoveries from severe and distressing symptoms were remarkable.—*British Medical Journal*, April 16, 1887, p. 823.

60.—REMOVAL OF URETHRAL CALCULUS OF UNUSUAL SIZE.

By W. H. BROWN, M.R.C.S., Assistant-Surgeon, Leeds Infirmary.

The patient, a man aged 36 years, married, and the father of two children, came to me complaining of pain and difficulty in micturition. The condition had existed for ten years past, but had greatly increased during the last three years. He brought with him a sample of his urine, which was alkaline, offensive, and contained much pus and albumen. He had been following his employment of insurance agent up to the time of my seeing him. On examination I found a large hard swelling on the under surface of the penis, extending from the glans backwards for a distance of about three inches. He told me that the swelling had existed for some years (he could not say how many), and had gradually got larger. The meatus was closed by warty growths, and I failed to pass even a fine probe. He further informed me that he now passed urine drop by drop. Suspecting calculus, I sent him home, and later in the day had him put under ether, when, after slitting up the meatus, I

removed a stone weighing 265 grains, and measuring two inches and a quarter in length, and two inches and a half in circumference at its widest part. Mr. H. A. Smith, one of the house surgeons of the Infirmary, kindly made for me the accompanying sketch, which gives a good idea of the shape and size of the stone. The after history is unimportant, the man making a rapid recovery and the urine clearing within a few days of the operation.



Actual size.

The points of interest which occur to me are:—1. The unusual size of the stone and its position; the recorded cases of large urethral calculi mention them as having been either in the perineum or scrotum. 2. The fact of the man being able to endure the presence of this large calculus in the urethra, of its being apparently no hindrance to sexual intercourse, and, until very recently, not sufficiently painful to compel him to seek relief.—*Lancet*, Sept. 24, 1887, p. 611.

61.—THE RADICAL CURE OF HYDROCELE BY EXCISION.

By FREDERICK A. SOUTHAM, M.B., F.R.C.S., Assistant-Surgeon to the Manchester Royal Infirmary.

[Of nine cases reported in the paper three were treated by injection, two by incision, and four by excision of the tunica vaginalis. Though all the cases were ultimately successful, Mr. Southam's experience so far very clearly demonstrates the superiority of the method by excision.]

The radical cure of hydrocele at the present day is usually carried out in one of the following ways—viz., by injection, by antiseptic incision, or by excision of the tunica vaginalis.

The last of these three methods—viz., that by excision of the parietal portion of the tunica vaginalis, first introduced by von Bergmann, and described by Bramann—is a plan of treatment which, so far as I am aware, has not hitherto been much adopted in this country. The operation is a simple one, and in four cases in which I have adopted it has been attended by the most satisfactory results. Bull, of New York, who has employed the same method

in three cases, regards it as "the only truly radical operation," and speaks very highly of it. It may be performed in the following manner, which, except in a few minor details, is identical with that of von Bergmann. The cavity of the tunica vaginalis is laid freely open by a vertical incision between two and three inches in length, made over the most prominent part of the swelling; the fluid will at once escape, and, as it does so, it is useful to secure the margins of the opening in the tunica vaginalis on each side with a pair of catch forceps, otherwise there may be a little trouble in distinguishing them after the evacuation of the fluid, and the walls of the sac have collapsed and fallen together. The tunica vaginalis is then dissected out on either side up to the point where it is reflected upon the epididymis, testis, and cord, by putting it on the stretch and separating it from its connections with the surrounding parts by means of the finger, assisted by a scalpel or pair of scissors. It is astonishing how little hemorrhage accompanies the proceeding if the finger is chiefly used. In my last case not a single vessel had to be secured. The whole of the tunica vaginalis is then removed, with the exception of the portion covering the epididymis, testis, and cord, by cutting through it close to those structures with scissors. All bleeding points having been secured, a drainage tube is brought out through the upper part of the wound and a counter opening made at the most dependent point of the scrotum. The interior of the wound, which will have contracted very considerably, is dusted over with iodoform, closed with a few sutures, and dressed with iodoform gauze and a wood-wool pad, care being taken that the scrotum is afterwards kept in an elevated position. Healing rapidly takes place, the slight swelling which follows the operation soon subsides, and the patient will usually be able to leave his bed and get about in the course of a week or ten days, as shown by the cases I have related. Though applicable to all cases of hydrocele, this method is especially valuable in those of long standing, where the tunica vaginalis has become much thickened and of dense consistence. As compared with the other plans of radical cure, the excision method has this advantage—viz., that it is almost practically impossible for a recurrence of the hydrocele to take place.

In the method by injection with iodine or carbolic acid (the latter fluid being now generally used), a recurrence takes place in a certain proportion of cases. Of three cases, which I have recently treated in this way, the hydrocele returned in one (see Case 3). It may be alleged against the excision method, as compared with the injection treatment, that it is more severe, and necessitates confinement to bed; but even in cases of injection the inflammatory symptoms are often so marked that the patient is unable to get about for several days. In the three cases which I injected with carbolic acid, the patients remained in hospital respectively for

nine, twelve, and fourteen days after the injection before the swelling and other symptoms had sufficiently subsided to enable them to resume their ordinary occupation.

The excision method is, I think, much superior to Volkmann's plan of simply incising freely the cavity of the tunica vaginalis. The process of repair in the former is much more certain, for, if an attempt is made to obtain direct union of the opposed serous surfaces after incision, there is always a possibility of non-obliteration of a portion of the cavity of the tunica vaginalis and a liability to recurrence of the hydrocele. If, on the other hand, as commonly happens, the cavity is obliterated by a process of granulation and suppuration, healing is quite as slow as, if not more so than, in cases where the serous membrane is removed. In a case treated by incision under my care some time ago (see Case 4) the wound had not healed at the end of four months, a troublesome sinus remaining, which had to be freely laid open and scraped before it could finally be made to close. If, after excision, uniform pressure is made upon the scrotum by the dressings, so as to maintain the opposed surfaces of the deep parts of the wound in contact with one another, healing will rapidly take place, often almost without any suppuration, just as is frequently seen after removal of the testis. In the course of a few months it will be found that the scar of the operation has almost disappeared; the scrotal tissues move freely over the surface of the testis, and it requires a careful examination to detect that any operation has been performed upon the part.—*Lancet*, Sept. 10, 1887, p. 515.

AFFECTIONS OF THE SKIN, ETC.

62.—ON THE MORE RECENT IMPROVEMENTS IN THE THERAPEUTICS OF THE SKIN.

By Dr. P. G. UNNA, Hamburg.

[Dr. Unna's Address on the recent progress in Dermato-therapeutics, opens with a brief reference to the absorptive power of the skin, and its variations under diseased conditions; its very limited capacity in the normal condition of the horny layer; its greatly increased capacity in such conditions as burns, eczema, pemphigus, and other bullous affections, where the horny layer has been more or less removed by the diseased process. The principle which underlies the more modern and physical methods of treatment is, that the products and secretions of the skin are either accumulated or got rid of by artificial means. Practically only three of these products need consideration:—1. The water-vapour, or insensible perspiration. 2. The fluid watery sweat, which appears in drops. 3. The fatty sweat. The various kinds of application are characterised by one salient point, namely, their influence on the stream of secretion. Either we restrict the secretion in order to

favour an unusually strong absorption through the skin, or we promote the secretion, but we must then deny ourselves the effects of a very powerful absorption.]

As representatives of the categories of the theoretically possible modes of treatment which I have mentioned to you, I will select three of the most important, and illustrate them in a few words: (1) the glycerine gelatines, as representatives of the porous coverings promoting absorption of secretions; (2) the salve mulls, as representatives of the best form of the purely fatty covering; (3) the plaster mulls, as representatives of an application with an impermeable covering.

The glycerine gelatines are distinguished above all the agents used for promoting the absorption of secretions, and especially in comparison with the pastes, by their adhesiveness, which constitutes a most useful addition to their other valuable characteristics. The most important of them is the zinc preparation, which finds a very extensive field of utility, no less as an independent therapeutic agent than as an auxiliary to the use of other agents. Slight superficial eczemas and erythemata, especially such as occupy the flexor surfaces of the joints or are distributed over large tracts of the body-surface, can be treated by means of it both quickly, safely, and pleasantly. The preparation is rendered fluid in a water-bath, then painted on to the skin whilst still warm with a broad bristle brush, after which the layer is dabbed over with a flock of cotton-wool. By this means the layer is soon dried, and takes on the nature of a fabric. From places which are free from hair it can be stripped off in a single sheet on the following day, but from places which are covered with lanugo it must be washed off with warm water. I must ask you to bear in mind that a covering of this gelatine not only does not restrain the perspiration of the skin, but that it actually considerably increases it. You need not hesitate, therefore, if the case should call for it, to paint over a child from top to toe. A patient when so treated quickly notices the perspiration, which takes place through the covering, for he shivers more in his suit of glycerine gelatine than he would have done had he been left naked. Hence this cooling mode of dressing is strongly to be recommended for all erythemata caused by artificial irritants, such as the heat of the sun, or drugs, whether they be accompanied by oedema or not, in acute erysipelatoid eczemas, and that class of diseases.

Still greater, perhaps, is the utility of the zinc gelatine as an auxiliary to other dressings. In this capacity, besides effecting the cure of inflamed surfaces, it ensures rest, immovability, and, if bandages are used to cover it, an increasing compression. It is therefore invaluable for itching and oozing affections on the faces and hands of children (eczema, impetigo contagiosa). Strips of the salve mulls, which I shall shortly describe, are afterwards laid

upon those spots which are oozing most freely; the parts on which the oozing is less marked are painted over with zinc gelatine, and the whole is surrounded and fixed with bandages made of mull. In this way a firm dressing is formed, and one which at once paralyses the efforts of children to scratch themselves. In the case of ulcers of the leg, it is of great advantage to paint the healthy skin thickly round about the sore with zinc gelatine, and then to bind the whole of the lower leg firmly with a double-headed bandage. Under this bandage the accompanying eczemas heal, the varicose veins improve, and the patient cannot possibly do himself any harm by scratching.

Whilst in these cases the compression caused by the gelatined bandages chiefly comes into play, in others it is the fixation of the plaster mulls, of which I am about to speak, and the exclusion of their influence from the surrounding healthy skin. This is effected by simply painting round the affected part, say a corn or a patch, of lupus, with a ring of zinc gelatine, applying the plaster mull, then painting over the whole, and dabbing over the surface of the paint with cotton-wool.

Again, in other cases the zinc gelatine assists us in avoiding the irritating effects caused by some of our stronger remedies; for example, in treating a case of psoriasis with a chrysarobin preparation, the flexures of the joints are apt to become irritated and painful after a few days, whilst the extensor surfaces show no reaction; if we then brush over the inflamed parts with zinc gelatine glycerine, and cover them with wadding, we can continue to treat the extensor surfaces without any feeling of anxiety.

Finally, we can make use of the zinc gelatine in order to cover up any unpleasant odours which may arise from the drugs which we employ—as, for example, tincture of tar, iodoform ether, or balsam of Peru—and thus to render the use of these odoriferous compounds less unpleasant to the patient. We can also combine many substances, such as resorcin, ichthyol or salicylic acid (up to about 5 per cent.) with the glycerine and gelatine; but the more efficacious way is to apply the drug direct to the skin in some form in which it dries on—as tar, in the form of the tar tincture, of which we have just spoken—and then to paint over it the layer of zinc gelatine. In this way any irritative action is diminished, the skin is protected from the clothing, the clothing again from the drugs, and the effects of scratching are avoided. These drugs cannot be incorporated in large quantities into the gelatine mass without diminishing considerably its adhesive power; and then, owing to their being coated with the composition, their activity is naturally very greatly impaired. It is quite otherwise with insoluble bodies like sulphur iodoform, and white precipitate, which can be added in larger quantities (10 to 20 per cent.) to the zinc gelatine.

I have now only to add that the glycerine gelatines as a class are, of course, contra-indicated wherever a high temperature is present, and the patients sweat excessively. In such cases the pastes which do not melt take their place as absorptive dressings.

The salve mulls hold, to a certain extent, the middle course between the glycerine gelatines and the plaster mulls, of which I have yet to speak. They are also indicated in the case of acute inflammatory conditions of the skin, but more particularly in those where an infiltration of the cutis already exists, as it usually does in most chronic eczemas. On the other hand, owing to the thickness of their layer of fat, they are too waterproof for very irritable places. They have in general the effect of a very thick coating of ointment, intensified by the extraordinarily accurate manner in which they fit into all the unevennesses of the skin, and by their large reserve of the ointment. They can, of course, even on the score of cost alone, only be used on limited areas of skin.

The salve mulls consist of a basework of mull, that is, undressed muslin, which is impregnated on one or both sides with an ointment composed of lard, lanolin, vaseline or other fats. Pieces are cut out of the required size, fastened to the skin simply by gently stroking them over with the finger, and then bound down with a mull bandage. It can be easily seen that the salve mull is only a neat, convenient, more adaptable, and therefore more efficacious, form of the strips of cloth coated with ointment which are used by the school of Hebra. It is remarkable that this simple and advantageous modification was never thought of until the year 1879. Now, however, it has taken root everywhere, at least in North Germany, and has considerably diminished the number of prescriptions for ordinary ointments. Salve mulls, however, can nevertheless never displace ointments in certain conditions, as, for example, where more complicated combinations are required for special cases, where the salve mulls are too watertight, and thus irritable to the skin, wherever hairy parts of the body have to be treated, or where the disease involves the whole skin. The more complicated the form of the skin, the more irreplaceable the salve mull, especially in the treatment of eczemas of the fingers, toes, hands, feet, ears, nose, face, and more particularly genital regions.

I will mention only four varieties as chief representatives of the class: (1) zinc salve mull; (2) zinc-ichthyol salve mull; (3) lead and carbolic acid salve mull; (4) zinc and red precipitate salve mull. With these four salve mulls all sorts of circumscribed eczema which will bear fats, and are not too inveterate, can be quickly and thoroughly healed, whether it be the most severe oozing eczema of the heads of sucklings, or the most obstinate fissured eczema of the scrotum.

Small rolls of paper covered outside with zinc and red precipitate salve mull, and inserted into the nostrils, cure with wonderful

celerity those eczemas of the nose and lips of scrofulous children which are generally so difficult to treat. This they do by fulfilling all the mechanical and other requirements of which we have just spoken, lying closely and firmly to the mucous membrane of the nose, and at the same time allowing a free passage for the air.

For practice among children salve mulls are particularly suitable, since, if properly bound on, they only require to be changed once daily, and, if the secretion be not profuse, they may remain without change for a space of two and even three days. Wasted children, for example, suffering from hereditary syphilis, only require their papules and ulcers to be dressed with zinc and mercury salve mull, in addition to good feeding and some preparation of iron internally, in order that they may bear well the mercurialisation which slowly but surely sets in. That forms, in my opinion, the neatest, most convenient, and surest treatment of the hereditary syphilis of infants.

From these few remarks you will gather that the more inflamed and more obstinate affections, above all, chronic localised eczema in all its forms, and especially the eczemas of children, make up the largest contingent for the treatment by salve mulls. In the case of adults it is chiefly the eczema of the hands, genitals, and face, whenever these require the plentiful use of some fat.

The plaster mulls can only be used where the deep situation of the morbid foci in the skin, or the intensity of the disease, or its indolence, render necessary an attack on it with the strongest remedies; but in such cases there is no stronger or more suitable form of administration. In order briefly to explain to you what a plaster mull is, I will commence by telling you what it is not. You might believe, when you hear that the body of the plaster consists of gutta-percha, that it is similar to what we find in the belladonna plasters of various other makers. Nothing is more incorrect than this idea. Quite apart from the fact that such plasters are made and recommended by non-medical people, who have no notion of medical requirements and of the working of drugs, and do not offer the slightest guarantee for their contents, whilst the plaster mulls have both the nature and quantity of their contents properly prescribed by the medical man, and are made up, under strict guarantee, by a competent pharmacist, so that they may be used accurately for medical purposes—apart from these differences they are still distinguished by the following important points. These plasters carry, on an impermeable body, a plaster mass which, in the usual old-fashioned way, contains the medicament mixed up with some adhesive substance, frequently of an irritating character. Even if we knew how much of the medicament this mass originally contained (which, of course, we never do), and could reckon out the percentage, yet anyone can see that a slight deviation of the spreader, with its consequent difference in the thickness of the mass,

would cause a larger quantity of the drug to be deposited on one spot than another. Besides, it is impossible to understand what the balance of any diluting mass is intended for, since only the top layer of any plaster can possibly develop any influence on the skin. Precisely on this account the effect of these plasters is relatively weaker and less certain, and their construction—even putting aside the fact that they are secret remedies pushed forward by laymen—is a most undesirable one, and quite unsuited to the exact indications of the therapeutics of the skin.

Now let us look at these plaster mulls a little more closely. You find that a layer of the medicament is cleanly and evenly spread upon a sheet of gutta-percha tissue, which is incorporated with a sheet of mull. The plaster mass is quite absent, and its absence is characteristic and important. Of course some medium must be employed in order to make the drug adhere on the one side to the plaster and on the other to the skin; and above all this medium must be absolutely free from irritation, a condition which at once excludes turpentine, resin, and bodies of that class. Two substances have proved themselves to possess these qualities: (1) the purest india-rubber; (2) purified oleate of aluminium. Both are quite indifferent to the skin, are unchangeable, and have the power, even in very small quantities, of causing the skin, the drug, and the plaster to cling together. The choice of the one or the other depends on the drug which we have to deal with. We cannot, however, put these bodies into the same rank as the old adhesive plaster constituents. For whilst on one mètre of plaster mull considerable quantities, say 20 or even 50 grammes of medicament are accumulated, so small a quantity as 2 to 5 grammes of the adhesive base may be sufficient to make it into a plaster. It is therefore misleading to reckon the strength of the plaster according to percentages of the drugs which they contain. They are always made of maximum concentration—that is, they always contain the exact amount of the drug which the physician may order, mixed with the minimum quantity of the adhesive substance, and spread out always over one mètre of the gutta-percha tissue. To take an example, when I order 20 grammes of some substance to be spread out in this manner, the drug probably amounts to 90 per cent. of the whole mass, that is, medicament adhesive substance; whereas if I prescribe 40 grammes to be spread over the same surface in order to make the effect twice as strong, and at the same time double the amount of the adhesive substance, the amount of the drug is still 90 per cent. Strength and percentage have thus no relative connection in the case of these plaster mulls, the strength is estimated by the amount of the active agent which is spread on a unit of surface. That lies in the nature of the plaster mull as the first really medicinal plaster of exact working power, and forms the reason why the plaster mulls are ordered with so many

grammes per $\frac{1}{5}$ square mètre, 1 mètre long by $\frac{1}{5}$ mètre broad = 1 roll, which is taken as a convenient unit. When a piece of such a plaster mull is applied, we have the medicament, which we order in a pure state, of the desired strength under an impermeable covering, united to the horny layer by a minimum quantity of the adhesive substance, and consequently all those conditions fulfilled which are requisite in order to extract the best possible effect from the given quantity of the active agent.

From among the plaster mulls which are most frequently employed, I will select four as examples: (1) the mercury-carbolic acid plaster mull; (2) the resorcin plaster mull; (3) the salicylic acid and creasote plaster mull; (4) the zinc oxide and mercury plaster mull.

The mercury-carbolic acid plaster mull for the treatment of all kinds of boils, abscesses, phlegmons, whitlows, parasitic sycosis, and buboes of the most various origin. When applied early, it has an abortive influence on the suppuration; later it ripens the process quickly, bringing about a painless opening of the abscess, and promotes the closing of the wound; or the surgical treatment of such conditions by means of a small incision may be followed up by the application of a plaster mull, over which, if necessary, a poultice can be applied. At the same time, sulphide of calcium should be administered internally in the form of keratinised (or intestinal) pills.

The resorcin plaster mull serves for the rapid treatment of all forms of severe rosacea and acne. The horny layer flakes off when the plaster is removed each second day, a process which may be repeated as often as is requisite. As an additional internal treatment, 1 to 2 grammes (15 to 30 grains) of ichthyol per diem is the most suitable.

The salicylic acid and creasote plaster mull are used in the treatment of lupus.

The method of using zinc oxide and mercury plaster mull for the treatment of constitutional syphilis consists in laying one-sixth to one-fourth of a roll of the plaster on some covered part of the body, as the back, the breast, the legs or arms, allowing it to remain there for a week, and then renewing the plaster, but changing the field of operation. This treatment is particularly to be recommended in the case of patients, such as commercial travellers and seamen, who can but seldom visit the same medical man twice. Of course it is less persistent in its effects than the treatment by inunction; therefore, whilst the latter requires on an average a treatment of about four weeks, the former milder treatment by the plasters must certainly be continued for four months. But during this time the patient does not suffer the slightest inconvenience, and the alimentary canal is left intact. The more serious symptoms of syphilis, such as ocular paralysis, iritis, hemiplegia, can be treated

in the same way, but they require a whole roll of the plaster to be wound round the thorax, in order that the cure may be sufficiently active. It is advisable to apply the plaster to those spots where the remains of the syphilomata, such as pigmentations, scleroses, lymphadenitis, tophi, painful joints and tendons, are still to be found.

Whoever has made use of these plasters in this way will easily understand how to employ other varieties of them. All plaster mulls which contain drugs with very active properties (especially salicylic acid, resorcin. arsenic, sublimate, and chrysarobin) should only be applied after the healthy skin in the neighbourhood has been first painted over with a ring of zinc gelatine glycerine in the manner which I have previously described.

Before entering into the treatment of any skin-affection, it is necessary, after having first made our minds clear, by a thorough examination of the whole of the skin-surface, as to the diagnosis of the affection, its extent, and the condition of the healthy skin, to ask ourselves two questions. The first is, is the affection to be treated locally or by application to the whole surface? In the case of very extensive eruptions, the general treatment of the whole surface is a matter of course; but it is also urgently to be advised in the case of all limited dermatoses whenever they are obstinate and occur in many scattered patches, as so often happens with psoriasis, lichen ruber, syphilomata, and lepromata.

Secondly, we must ask ourselves in what form is the medicament to be applied? If the treatment is to be general, we have the following grades, according to the severity and obstinacy of the disease: a general inunction of the body with ointment and the wearing of a woollen undersuit, which is the most perfect way of hindering the perspiration; next, painting the whole body-surface with glycerine-gelatine, or smearing it with a paste; and finally, the milder forms of treatment by baths, soaps, and dusting-powders.

If, on the other hand, the extent of the treatment can be limited, you have to determine which of the methods that I have spoken of ought to be employed. According as you find that you have to attack the diseased regions more vigorously and to render them more tender, or that a more superficial effect is sufficient with absorption and drying of secretions, you have to choose from these grades, first, the plaster mulls, then the salve mulls or ointments, and finally, the glycerine-gelatines or their equivalents the pastes, and the weakest forms of localised baths, soaps, and powders. This accurate limitation of the form of the treatment, before you determine on the special medicament which you are going to use, will spare you much useless trouble and many disappointments in practice.—*British Medical Journal*, Aug. 27, 1887, p. 449.

63.—ON THE THERAPEUTIC USES OF PURE LANOLIN.

By N. WULFSBERG, M.D., Christiania.

[After an interesting historical survey, in order to show the identity of Lanolin with the *Æsypum* of the ancients, Dr. Wulfsberg goes on to speak of his therapeutic experience of the substance.]

In the lanolinum purissimum anhydricum (Liebreich) a preparation has been brought into use which is not only as superior to the best Attic *æsypum* ever seen by Dioscorides, as are our modern candles to the tallow dips of our grandfathers, but which also—by its proved physiological value—presents the best basis for ointments hitherto known.

During the autumn I had occasion to try the purified lanolin, and some ointments prepared with it, on patients. I may say at once that I began my trials with a certain scepticism. I have too often been disappointed by new remedies, even where these have been well recommended, and it so happened that during the last year a number of fats for ointment had passed through my hands. Among the latter had been a specimen of the centrifugated lanolin—the kind first brought in the market—of which, at the time, I formed rather a poor opinion. I was, therefore, really surprised to find that the very first trials with the purified preparation turned out well. This favourable opinion has been confirmed by further examination. Lanolin is no panacea, nor can it entirely replace the other fats, but in many cases it certainly brings about a quicker and more decided cure than the usual remedies.

I will begin with a simple case, and will describe the application for pruritus and prurigo senilis. The case of pruritus was that of a woman, aged about eighty, whom I had repeatedly treated, partly with internal applications (*natrium bicarbonicum*, *kalium bitartaricum*, *kalium bromatum*, *radix valerianæ*), partly with baths, and finally with inunctions of fats, of which latter only cod-liver oil—disagreeable in various ways—could relieve the irritation. This new attack had followed upon mental anxiety. I now prescribed lanolin. A short time after the first application the itching ceased, quiet sleep set in even the first night, and after a few days the condition had improved so much that the patient was only now and then obliged to apply a small quantity of lanolin. In this case I returned to the use of the less expensive centrifugated lanolin with satisfactory results.

A woman, aged eighty-eight, with prurigo senilis, was admitted into my hospital. The skin was covered everywhere with papules and pigment-spots from former eruptions; the patient was thin and worn through itching and sleeplessness, and the general condition was very unsatisfactory. No trace of vermin was found. Scarcely a year passes without my having several similar cases from the poorer classes, and my experience has invariably been

that after some time, in consequence of the more generous diet and the careful skin-treatment, they are dismissed as cured. The remedies I was formerly in the habit of using were inunctions with grease, and in the more serious cases cod-liver oil poultices. In this case I at once turned to the lanolinum purissimum anhydricum, of which I had an ointment prepared with 50 per cent. adeps suillus, and ordered it to be applied to a quarter of the body every evening. An improvement set in after a day or two; appetite and sleep returned; after a week the patient had so far recovered that a warm bath could be ordered. After four weeks the patient's condition was normal, the embrocations were discontinued, and she only now and then complained of a slight itching at the neck or the arms, which was promptly put a stop to by the application of lanolin.

In the case of simple abrasions and excoriations, I use either an inunction of lanolin or else lay it on with the help of a puff of cotton-wool. It acts as a protective cover, eases the pain, and favours the formation of new epidermis by softening and distending the surrounding skin. Deeper injuries, of course, require antiseptic treatment, and for these I have not yet made use of lanolin, though it might possibly with advantage take the place of glycerine, castor-oil, and resin in the preparation of antiseptic gauzes.

A lanoliment consisting of anhydric lanolin with 10 per cent. of oxide of zinc was applied instead of the usual zinc ointment. It takes the place of the latter in every respect, and possesses the advantage of sticking to damp surfaces and being easily rubbed into them. Instead of ceratum labiale, the lanoliment oxydi zincici became a great favourite; it makes the lips supple, and has a neutral taste.

Still better results were achieved with a boric acid lanoliment, of which I applied both a 10 per cent. and a 20 per cent. mixture. With the weaker ointment I treated two cases of herpes circinatus. The one case was that of an elderly man who was employed in a cigar-shop, and whose wrists and hands had been for some weeks the seat of a well-developed exanthem. The other case was a woman who, on wearing a red woollen under-jacket, had developed a quantity of irritating but dry circular efflorescences (not pityriasis versicolor) on her shoulders and the upper part of the back. Both cases were cured within a week. The 20 per cent. boric ointment has done specially good service in a case of recurrent eczema, of which I will give a more detailed account.

N. N., a married woman, aged 38, first came to me for treatment in the autumn of 1885. At that time she had been suffering for six weeks from a very violent eczema, which had spread over her face, ears, head, neck, and throat, besides her hands. The places attacked were mostly covered with a purulent crust; the eyelids and outer ears were much swollen; the irritation was

unbearable. Under the crust were wet, slightly infiltrated, and sometimes bleeding surfaces; at the edges the exanthem was in some places advancing, and was bordered by a curved row of small pustules. At both the ears the exanthem encroached upon the outer auditory passage, the opening of which was covered with bloody rents and exfoliating pieces of epidermis, and was the seat of the most terrible irritation.

The patient, who before this had been a blooming young woman, was very worn and thin. In consequence of the continued sleeplessness and unceasing itching, she was in a sad state of weakness and nervous irritability. Medical advice had been taken from the beginning, but had as yet been unsuccessful; however, in a short time, by the continued application of goulard-water compresses I was able to give relief, followed after some weeks by complete restoration. During the year that followed, the patient did not suffer in health for a single day until the autumn; when I was called in I found her in bed, where she had been for three days, the eczema was fully developed at all the old places, in the middle a crust was beginning to form; damp spots everywhere, and round all a zone three to four centimetres wide, of tight translucent pustules. The eyelids were swollen, especially the right one, which could not be opened. There was constant irritation. The patient, remembering her former experience, had been applying compresses of goulard-water from the beginning, but had experienced no relief. I at once put a stop to treatment with water in any shape, and myself applied the following lanoliment: \mathcal{R} . *Acidi borici pulverati*, 20.0; *lanolini purissimi anhydr.* (Liebreich), 80.0. M.D. s.

The ointment was applied pretty thickly, and was easily rubbed in, even at the damp spots. A feeling of moderate burning immediately set in, which, however, was felt as a relief from the former irritation. After a quarter of an hour the irritation had become bearable, and I left the patient. On the sixth day she wrote to me as follows:—"Let me thank you for the wonderful ointment, which really has had an extraordinary effect. The itching became less irritating at once, and the swelling has gradually gone down, so that it has now almost disappeared with the pustules."

A week later I saw the patient once more. There was no fresh eruption, the skin was smooth and soft all over; only a slight susceptibility to draughts and to water remained, in consequence of which the ointment was still occasionally applied.

In the case of bedridden female patients, whose long hair is very troublesome to comb, on account of its entanglement, the following pomade has done good service: \mathcal{R} . *Lanolini puriss. anhydr.* (Liebreich) 15.00; *cetacei*; *olei amygdalarum āā* 5.00; *olei bergamiæ* gtt. v; *olei lavandulæ* gtt. xv. M. f. l. a. ungt. D. s.

Tar-remedies can also with advantage be applied as lanoliments, as may be seen by the following example. N. N., a naval cadet, had been attacked whilst on a voyage in the tropics eight or nine months ago, by a dry eczema on his hands and face, the nose especially having a florid appearance. The following ointment was prescribed: *R. Ung. basilici nigri 5.0; lanolini puriss. anhydr. 45.0* (Liebreich). M. D. s. (The first ingredient is *u. basilicum* Ph. Germ., with an addition of 12 per cent. of *pix liquida*, and thus almost identical with the *emplastrum tetrapharmacum* of Celsus.) In a fortnight the eczema was cured, and has never appeared again. An ergotin-ointment, which I often prescribe in cases of hemorrhoids, has also been prepared with lanolin, the result being highly satisfactory.

Finally, I have made use of a *lanolimentum hydrargyri cinerum*, prepared with 10 per cent. of fat, sometimes in the form mentioned, sometimes worked in with twenty times its bulk of anhydric lanolin. The second form of the ointment proved of great value where there were vermin. Only a few inunctions were required to exterminate numerous settlements of *pediculi pubis*, and the disagreeable skin-irritation that so often ensues upon the exhibition of the ordinary mercurial ointment did not once occur. This ointment was also applied in a case of chronic infiltration round the *tendo Achillis*, after the healing of an abscess, and the result was that absorption was complete within eight days.

In a case of leucorrhœa with a highly irritating secretion (where a gonorrhœal infection could not be traced), I applied the stronger mercurial lanoliment, with good result. No suitable cases of syphilis came under my notice during this time.

I have thought it well to describe these therapeutic experiences at length, not in the hope of bringing lanolin into general use—for this my help may well be spared—but because, having at the first reintroduction of wool-fat expressed rather prematurely a contemptuous opinion of it, I think it my duty to state the facts that have caused me to alter my views. I have found pure lanolin to be a valuable remedy that I could now ill spare in my practice.—*British Medical Journal*, May 21, 1887, p. 1088.

64.—ON MOLLIN.

From a Review by Dr. H. G. BROOKE, in the *Medical Chronicle*.

Soaps possess many advantages as vehicles over ointments in point of durability, of firmer consistency, and of cleanliness, but as ordinarily applied, merely during the act of washing, their action is too brief to be of much effect. Soft soap has been used as a constituent of ointments commonly enough, but until recently no preparation of soap has been made use of as a general basis for ointments. In the same number of the *Monatsh. für Prakt. Der-*

matologie, 1886, two such bases were described, viz., Mollin, by Dr. Kirsten of Leipzig, and Salve-soaps by Dr. Unna and Apotheker Mielck.

Mollin (so-called by Canz, a pharmacist of Leipzig, who worked out the details of its manufacture) is formed by soaping lard with caustic potash solution in the cold so that 17 per cent. of the fat remains free, then warming the mass with 30 per cent. of pure glycerine. It forms a dull whitish body, which smears well, and is yet of firm consistence, keeps unchanged, washes off readily from the skin simply by the application of water, and does not dirty the clothing. It forms an admirable base for a mercurial ointment, rubbing up quickly with equal parts of the metal, and forming a cleanly ointment—an important distinction from the common blue ointment, which is an eminently dirty composition. Kirsten also speaks well of the styrax ointment, and of that made with *pix liquida*, but it will serve equally well as a base for all the ordinary ointments, except those used for the more acute affections. In the *Monatshefte*, 1887, the same author recommends a Mollinum (or Mollin ointment) made up with tincture of iodine, as being far preferable to the ordinary ointment made with fat. This Mollinum Tr. Iodi he finds of most extensive use, and wonders that the tincture of iodine is so neglected by medical men. His list comprises “all inflammatory and non-inflammatory swellings of superficial parts, e.g., of the glands, periosteum, subcutaneous cellular tissue, lymph vessels, muscles and skin, certain degenerations of the skin, the abortive treatment of whitlows, boils, and abscesses, chilblains, smallpox vesicles, various affections of the joints, bursa mucosa, testes, seminal cords, &c.; dislocations, sprains; absorption of exudation, as in pleurisy; subcutaneous blood effusions and extravasations, &c.” The Mollinum Potassi Iodidi Kirsten intends to take the place of the useless officinal salve made up with vaseline. It is formed by adding iodide of potassium solution to mollinum, the dose of the tincture and the salt being regulated according to the wish of the prescriber. The salt does not decompose and liberate its iodine until it is rubbed into the skin.

Unna adopts rather a different method of using the same combination. He makes a soft soap by heating caustic potash with lard, instead of with oil as in the ordinary process, and to this he adds 5 per cent. of lard. This mixture to which he gives the name of Salve-soap (*Salbenseife*) or *sapo unguinosus*, he uses partly as a soap, and partly as an ointment. Combined with the requisite drug (mercury, iodide of potassium, ichthyol, ichthyol and tar), it is first rubbed into the skin for five to fifteen minutes, either with wet wadding or a hard bristle-brush, as the case may demand, until suds are freely produced; these are then washed away with water and the skin is wiped dry. By this means the soap and fat

penetrate thoroughly into the epidermis, and sufficient is left on to form a covering. He does not consider it desirable to add more than 5 per cent. of fat, but if it is wished to diminish the effect of any particular salve, glycerine, lanolin, or vaseline may be added to it. If a large excess of fat be added the character of a soap is lost, and the mixture becomes a soap-ointment, such as the old and well-known Ung. Wilkinsoni.

The *Mercurial Salve-Soap* (*Sapo cinereus unguinosus*) is made by rubbing together 1 part of quicksilver with 1-6th part of ordinary mercurial ointment and adding 2 parts of lard potash soap. It is of great advantage where the skin is fatty and prevents the proper absorption of mercury in lard, and is, moreover, like the mercurial soft-soap (Oberländer, Schuster), a more economical preparation.

The *Iodide of Potassium Salve-Soap*, the formula of which is—Saponis unguinosi, 9 parts; potassi iodidi, 1 part; aquæ, pauxillum—is efficacious, whilst the officinal preparation is useless.

The *Icthyol Salve-Soap*, which contains 5%—33% of ammon. sulpho-ichthyol he finds of great service in all intertrigines, in furunculosis, acne and rosacea, and in seborrhœic affections, from simple pityriasis capitis and dry seborrhœa to universal seborrhœic eczema. Brushing with the soap he also finds to be of great value in acute relapses of chronic eczemas, in urticaria and lichen urticatus, in circumscribed chronic eczemas, chilblains, and the various superficial rheumatic affections.

The *Icthyol-tar Salve-Soap*—which has the formula, R. Saponis unguinosi, 7 parts; ol. cadini, 2 parts; ammon. sulpho-ichthyol, 1 part—has the advantage over Wilkinson's sulphur, tar, and chalk soap-salve that lead and quicksilver salts can be added to it, and that the alkali of the chalk can be dispensed with. It is, according to Unna, the best remedy in obstinate limited areas of infiltration, especially sycosis vulgaris, and some varieties of eczema, and when well washed with water is scarcely visible by day.—*Medical Chronicle*, Sept. 1887, p. 507.

65.—PLASTERS IN THE TREATMENT OF SKIN DISEASES.

By WYNDHAM COTTLE, M.D., M.R.C.P., Surgeon to the Hospital for Diseases of the Skin, Blackfriars, London.

Of late years one of the most generally used methods of local treatment of skin diseases, especially eczema, has consisted in enveloping the affected portions of the skin in pieces of soft material such as muslin, thickly spread with diachylon ointment, over which soft rags are placed to prevent the melted ointment soaking through; the whole dressing being held in position by a firmly applied bandage. Previous to the application of the ointment as described, the affected part may have been treated by free

use of soft soap or other stimulating measures. This dressing was to be renewed morning and evening, and it was a point of the first importance that the ointment should be thickly spread, and that the pieces of rag covered with it should be applied evenly and in close contact with the skin, and that there should be no delay between the use of the soap, if employed, and the subsequent application of the ointment. I need scarcely call to mind that diachylon ointment is made by boiling litharge with oil in the presence of water.

When I first employed this method of treatment, I encountered considerable difficulties. In the first place it was not easy to obtain the ointment uniformly made. Sometimes it was deficient in cohesion and apt to crumble, or it was so hard that it would not spread unless partially melted, or it was so soft that with the heat of the body it rapidly liquefied and soaked away, often saturating the clothing of the patient, and penetrating through the rags and bandages which had been placed over it. Again, patients and their attendants did not like the trouble of spreading the ointment, and they were apt to put it on either too thickly or too thinly, since it requires some mechanical skill to spread ointment uniformly.

It seemed to me that many if not all these difficulties would be removed, and some additional advantages gained, if it were possible to obtain the ointment ready spread on some suitable substance and of such a consistence that it would not liquefy at the temperature of the body, and at the same time possess some adhesive qualities. After experiments in this direction extending over some years, I succeeded in obtaining a plaster of the same constituents as diachylon-ointment, and this plaster fulfilled the essential conditions of being sufficiently adhesive to make it adhere to the part to which it was applied; its melting point was such that it did not liquefy at the ordinary heat of the body; and being spread upon substances as deficient as possible in elasticity and stiffness, it readily took the shape of the part to which it was applied, its adhesiveness keeping it in close contact with the skin. The plaster is dull white, about the thickness of the back of a table-knife, and is spread either upon paper, or on a paper made of palm-fibres, or upon thin kid or strips of muslin. In cold weather the surface of the plaster may need to be slightly warmed before the fire or firmly pressed on the skin if it is wished to make it adhere readily. Care must be taken in warming the plaster not to melt it. Before putting it on, all crusts, scales, &c., must be removed from the affected parts, either with the soap treatment or other means, in the same manner as before applying diachylon-ointment spread on rags. The skin to which the plaster is to be applied having been carefully dried, and the plaster being cut so as to slightly overlap the part which it is to

cover, it is to be firmly pressed on the skin, when it will adhere sufficiently to maintain its position.

If the part is discharging, it is advisable to put on a new piece of plaster two or three times daily, the part being thoroughly cleansed, washed, or bathed with lotion in the same way as when diachylon-ointment is used. In cases where little or no discharge is present it will suffice to put on a fresh piece of plaster once or twice daily, removing the discharge, if any is present, before putting on a fresh piece. If there is no irritation and the part is quiescent, the same piece of plaster may be left untouched for two or three days or a week. The plaster itself gives some mechanical support to the skin to which it is applied, which has a remedial action. If it is desired to give a part a more pronounced support, a bandage can be placed over the plaster in the way in which it is applied to a limb dressed with diachylon-ointment. For the limbs, if it is desired to envelope the whole limb, the most suitable form of plaster is that spread on strips of muslin, which can be applied overlapping one another, and crossing in front, in the same way as limbs are usually strapped with diachylon-ointment.

One of the advantages of plaster over ointment spread on rags is that, by its own adherence, it will remain applied to parts to which it is difficult to keep ointment in close contact. The plaster which I have had made will maintain its position without the aid of bandages, &c.; for example, on the face (especially in children), round the neck, under the arms, in the flexures of the elbows and knees, on the wrists, the palms or backs of the hands and fingers, and, of course, on any part of the body. In cases of eczema, the groins, and penis, and scrotum can often, with advantage, be enveloped in it spread on thin kid. In parts exposed to much friction, such as the wrists or hands, the plaster will last longer if protected by a glove or piece of bandage. The plaster on muslin is neither detached from the skin nor destroyed by immersion of the part in cold water.

The conditions of disease in which such plaster can be used with the greatest advantage are those in which spread diachylon-ointment is of so much service. This is chiefly eczema. In eczema of the palms and soles, and in the drier forms of this disease, it has, in my experience, proved especially useful. In most cases of this complaint in the flexures of the limbs it gives comfort and causes rapid amendment, while in eczema of the neck and of the groins, scrotum, &c., it will often give relief, and remove the disease when other local measures have failed; and it takes away the necessity for the galling and inefficient bandages and supports that are required to keep dressings in position in cases of this distressing complaint on the lower part of the body and under the arms. It can also take the place of the cumbrous and unsightly masks spread

with ointment in which it is sometimes found necessary to enclose the faces of children suffering from eczema. The plaster can also be used in other complaints in which spread diachylon-ointment is serviceable, such as sycosis, very inflamed psoriasis, &c.

For some years past I have used the plaster I describe in a large number of cases of cutaneous disease, and I have found it very useful, many cases of eczema in the hands and lower part of the body yielding to this treatment when other measures had failed. The form of plaster I now use has only been arrived at after repeated experiments and modifications. Any drug the action of which is desired can be incorporated in the diachylon-ointment plaster, in the same way as it can be with diachylon-ointment, but it must not be of such a kind as to combine chemically with the lead base of the plaster.

The advantages of this plaster are :

- (1) Its ease of application.
- (2) Its healing and soothing influence, principally in cases of eczema—especially in its less acute forms—retaining the remedial action of diachylon-ointment without its inconveniences.
- (3) The mechanical closeness of its application to the skin.
- (4) No additional means are required to keep this dressing in position, but can be used with it if required.
- (5) Its neatness, cleanliness, and cheapness.—*British Medical Journal*, July 16, 1887, p. 121.

66.—ON A NEW TREATMENT FOR OBSTINATELY RECURRING ECZEMA.

By H. RADCLIFFE CROCKER, M.D., F.R.C.P., Physician to the Skin Department, University College Hospital, London.

When the diathetic or other defect of health upon which most cases of eczema depends is duly met by general and medicinal measures, and the local applications are adapted to the stage and degree of inflammation, while the denuded surface is protected from the irritating influences of air and water, the vast majority of cases get well ; but, in a certain number, just when we think that we have conducted the patient safely through the attack, a fresh outbreak occurs and we have to begin again, and this over and over again until the resources of the medical man and the patience of the sufferer are well-nigh exhausted. It is for some of these disheartening cases that I now propose a means which will, I believe, bring relief in the majority of instances. I was first induced to try this treatment in a case I had under my care last year in a man, aged 56, who had had eczema on the hands and face, and had been incapacitated for work for three years; he was inclined to constipation, but otherwise his general health was excellent, and he was robust in every way.

Various kinds of treatment were tried, both internal and external, including that refuge of the destitute, arsenic, but although temporary improvement was obtained, so that the discharge and hyperæmia diminished, and he seemed to be getting well, in a few days out came the eruption as badly as ever, chiefly on the face and arms. I came to the conclusion that it must be due to a vasomotor neurosis, and that if I could get at his vasomotor centres I might do some good. Without in any way altering the treatment previously employed (feeling that I could not possibly make the eruption worse) I painted liq. epispasticus on the nape. Owing to the thick scales the blister did not take, and it was repeated after cleaning the surface, and a good blister formed; a fresh acute attack was just threatening, but it did not come on, and the patient felt better. Three days later, the part having healed, the blister was repeated and there was evident improvement after it; the scales were less and the irritation was much relieved. The patient continued to improve, but the rash threatening again, another blister was produced. This, however, did not stop the rash, which came out freely, but the itching was much less than usual, and the eruption lasted but a short time, and from that time he continued to improve and went out almost well, and was able to go to work for five months, but having to keep his hands much in water it then returned. Encouraged by this result in a very unpromising case, I have extended the treatment, but using milder counter-irritants, such as mustard plasters or mustard leaves instead of blisters, which were unnecessarily severe. The following case illustrates still better the value of the treatment.

Mr. R., aged 60, on August 5th, 1885, after a chill had a severe general attack of eczema, with bronchitis and nocturnal attacks of spasmodic asthma; by appropriate treatment all these symptoms were subdued, and a great deal of eczema had disappeared by the end of the month; every night, however, he had acute exacerbations in the legs, which itched violently, and fresh papules came out. On August 31st I ordered him to have a tile heated and wrapped in flannel and applied to the lumbar region. When I saw him again on September 3rd there had been no return of these nocturnal exacerbations on the legs, but the face and arms were giving him great trouble. I tried to induce him to put on a mustard-leaf to the nape, but it was not until he had endured ten sleepless nights that he would consent to try the mustard. He then put it on, and was so satisfied with the result that he put on another the next night of his own accord, and the nocturnal attacks were at once greatly relieved, but as there was still some irritation I painted on liq. epispasticus. A rather severe blister ensued, but from that time I had no further trouble, and in a fortnight I ceased to attend him.

In a case of eczema of the scrotum which had lasted for some

weeks, where the irritation was as usual very severe, mustard leaves over the lumbar enlargement, rest, and a little olive oil smeared on to prevent the parts sticking to the bed-clothes, were the only means employed; relief to the distressing itching was at once afforded, and he got quite well without any other treatment.

Latterly I have been using it in acute cases also, such as the following. Mrs. E., a stout woman, aged 40, had an acute attack of eczema of the face and forearms, with great swelling and redness, and profuse discharge of the arms, but not of the face; she had saline aperients and lin. calaminæ. There was great irritation, and I ordered her a mustard leaf to the nape; the itching was less in the night, and the morning after, the swelling and redness decreased, and continued to do so as far as the face was concerned, and the arms were much easier; there was no eruption round the site of the mustard leaf.

These are only samples of many cases in which I have employed counter-irritation. I vary the position of the counter-irritant according to the region affected; thus, for the face alone, it is placed behind the ears; for face and forearms, on the nape; about the genitals or legs, over the lumbar enlargement; and if one leg only is affected, on the hip over the large sciatic nerve.

The result has been more or less beneficial in the great majority of cases. It has seldom failed to relieve the itching, and generally procured sleep, at least on the night of application, and often the alleviation has lasted for several nights. In many cases the redness and swelling has also subsided, sometimes entirely, sometimes in great measure, and generally enough to make it more amenable to local treatment than it was before. To my surprise, I confess, in none of the cases has an eczema been excited on the site or neighbourhood of the counter-irritant, even when applied on an already eczematous surface, and often, in such cases, the eczema cleared off all round the site of the mustard; although, as might be expected, no benefit was obtained in a few cases, in none was the disease aggravated; at the same time, it is very probable that, if repeated too frequently, and at too short intervals, in some cases there might be increased irritation; perhaps it was so in the cases of general psoriasis in which I tried it, but without expectation of much good. Strips of mustard-leaf were put on all down the spine. In the next three days there was distinct improvement, less redness, and less scaling; it was repeated three nights later, and this time the eruption went back to its original condition; the treatment was not continued.

One advantage of this method is that it does not interfere in any way with other treatment, whether internal or external, and that it is safe; but inasmuch as there is a natural shrinking from irritants on the part of an eczema patient, it may be more prudent in some cases to begin with dry heat, such as a hot tile wrapped

in flannel, and if sufficient relief is not obtained, to go on to stronger applications. It would have been easy to multiply successful cases, but I trust I have said enough to induce others to give the treatment a trial, and if they do so, I hope they will report the result.—*British Medical Journal*, July 9, 1887, p. 66.

67.—ON WINTER PRURIGO, OR FROST-ITCH.

By J. F. PAYNE, M.D., F.R.C.P., Physician to St. Thomas's Hospital, London.

[Dr. Payne records four examples of this disease in the course of the paper from which the following excerpt is taken. We reproduce only the report of Case No. 1.]

Many persons suffer from itching of the skin in cold weather, especially when the air is keen, dry, and frosty. They begin to scratch when they take off their clothes to go to bed, and some can foretell, by their sensations, a frosty night. Others suffer more from the irritation when they become warm, more particularly from the radiant heat of a fire, but only when the outside temperature is low. In short, change of temperature more than absolute cold is the exciting cause, and dryness of the air is also an important factor.

In most cases these inconveniences are transitory, and not severe enough to cause the sufferer to apply for medical advice; but sometimes the liability to irritation from this cause is so great that it constitutes a very troublesome affection, and may deserve a special name. As such it was first described by Dr. Duhring, of Philadelphia, in the *Philadelphia Medical Times* for 1874, as "Pruritus hyemalis," and independently by Mr. Jonathan Hutchinson, in 1875, as "Winter Prurigo" (*Lectures on Clinical Surgery*, 1878). Since then the affection seems to have received little attention, and hence the following account of some cases observed in the last two winters may be worth placing on record.

The one characteristic of this affection is intense itching, which lasts more or less through the winter, from November or December till March or April; varying to some extent with the severity of the weather. The only lesion of the skin is one which appears to be secondary to the irritation, namely, small hard papules not passing into vesicles, on the outer aspects of the arms and legs, seldom on the trunk, and accompanied by signs of scratching. This eruption is rather the consequence of the disease than its cause, being set up by the scratching and rubbing to which the itching gives rise. It is essentially the same in most itching affections of the skin where there are not more distinct lesions, and may be called symptomatic prurigo, distinguished from substantive prurigo (Hebra's disease), where the papules appear to be the starting point of the irritation.

The affection is unconnected with any special state of health,

and may recur every winter for many years. But in mild winters it may be quite absent; and possibly the mildness of the weather in several winters previous to 1885-6 is the reason why this affection has not been lately much noticed. The following case is one of the best marked.

Case 1.—Mr. C., aged 33, a London tradesman in good circumstances, came to me in January, 1886, during cold weather. He complained of the most intense itching, which tormented him both day and night, but especially when he was hot. It was torture to him to be near a fire, and he could not bear hot rooms, so that he never went out to any evening entertainments. Christmas Day was spent by this poor man not in the society of his family, but alone in his bedroom, scratching himself. The condition was aggravated also after meals; and eating anything indigestible, such as pastry, brought on the irritation at once. At night the itching was sometimes very severe, so as to lead the patient to rub himself when in bed with a hair-glove, but sometimes, on the other hand, he slept pretty well. These symptoms had afflicted him for the past four years, but only in winter, always going away in March. The last winter (1884-5) he had suffered very little, but this was a mild season. He was a tall robust man, and enjoyed very good health, except for indigestion, of which he complained a good deal, and which he attributed to want of exercise. Very likely this had some foundation, as for a man of his physical development his occupations were too sedentary.

The eruption consisted of hard papules, not vesicular, situated chiefly on the outer sides of the thighs and to a less extent on the inner sides, also on both aspects of the forearms, and a little on the upper arms, but none on the trunk or the face. There were also marks of scratching. The papules were sometimes red, sometimes pale; when scratched much, they formed crusts.

The treatment of this troublesome affection is not very satisfactory. If the patient suffers from dyspepsia and debility, we naturally treat him for these symptoms, but with little effect as regards the itching. The only true indication seems to be to soothe and protect the skin as thoroughly as possible. Warm clothing is, of course, essential; but, since any woollen garments which are at all rough often irritate the skin, some soft, pure woollen must be found. It should be remembered that much of the so-called "merino" clothing is more than half cotton.

Next, some physical protector in the form of an oily or viscid lubricant should be applied to the skin. This, by soaking into the epidermis, makes it a much more perfect non-conductor of heat, and thus the peripheral nerves are shielded against changes of temperature. Glycerine is the favourite substance, and in Case 3 the patient thought nothing else did him any good; but patient No. 2 preferred vaseline. The glycerine may be used pure, or

diluted with an equal part of water or camphor-water. Probably free inunction with olive-oil would be better still; but I have not been able to induce patients to give it a fair trial.

At first I used lotions containing lead, carbolic acid, and glycerine, but afterwards came to the conclusion that the last was the only useful part of the prescription. In certain cases, especially when the irritation is worst at night, small doses of chloral hydrate are very useful. In Case No. 2 I gave fifteen grains every night for a time, and believe that the benefit attributed to local remedies was chiefly due to this. For obvious reasons, it is a remedy not to be used hastily or continued too long; but the benefit is not confined to the night, as the nerves are permanently soothed.—*British Med. Journal*, May 7, 1887, p. 985.

68.—ON THE TREATMENT OF TINEA TONSURANS.

By GEORGE THIN, M.D., London.

[In the course of a long and exhaustive article on the Pathology and Treatment of Ringworm, Dr. Thin lays down the following plan for the treatment of ordinary cases of Tinea Tonsurans. All methods of treatment in vogue, and almost all that have ever been suggested, are passed in review; but we reproduce here only the methods followed by Dr. Thin himself.]

On the whole, I believe, in ordinary cases of ringworm, with more or fewer scattered patches over the head, and probably with isolated diseased hairs, the best plan is to continue a treatment with carbolic glycerine and an ointment containing citrine, or white precipitate ointment, the strength of both glycerine and ointment being proportioned to the age and strength of skin peculiar to the patient. A little observation of each case teaches the necessary strengths. This treatment prevents the spread of the disease, and if continued for a sufficiently long time will, in the great majority of cases, effect a cure. Patience, however, is required both on the part of the parent and the practitioner. If this patience fails, what is next to be done? I advise in such a case that small selected patches be treated by some of the more vigorous methods which are warrantable when the disease is confined to one or two small spots.

Some years ago I tried the effect of simple *fat*. For two months two patches on the vertex of a boy, each about the size of a shilling, were kept persistently covered with a thick layer of fat. The disease did not spread at all, but it did not in the least get well. I then painted the patches repeatedly with *Coster's paste* (a solution of iodine in creasote), making the applications myself. A cure was gradually effected in a comparatively short time, and no baldness followed.

Blistering acts in two ways. It acts by setting up inflammatory action in the hair-follicles, and it also acts by removing the horny

layers of the epidermis, and thus increasing the irritating effect of ointments which are usually combined with it. Blisters should never be used over a large surface, nor would I use them at all in young children. Of course, the effect of a mercurial ointment is increased when applied to a blistered surface, and the risks of absorption are greater. It is certain that although salivation is produced in rare cases, it is not at all a common result from mercurial ointments applied to the scalp in the strengths generally used.

There are two objects to be kept in view in treating the disease. The first, which is not difficult to attain, consists in resisting its spread. The second is to get rid of the diseased hairs, and produce a growth of healthy hairs in their place. When the stumps become fewer and the new fine hairs more numerous, we know the disease is getting well, and any treatment which produces this result should be patiently and perseveringly continued. If the disease makes no progress, or if it is advisable to change the treatment, what choice is to be made amongst the numerous class of remedies recommended? First of all, it is well that we should recognize wherein the difficulty of cure consists. If we extract one of the stumps from a patch that has been long under treatment and put it under a microscope, we shall find that the spores are destroyed to a point which is considerably below the level of the opening of the hair-follicle.

A question has arisen as to whether it is wise to wash the head of a child suffering from ringworm, the fear being that in the washing the spores may be carried over the head. I have not known this occur, and am of opinion that washing the head with soap and water is good, more particularly washing with soft soap. I believe that washing with soft soap is in itself an effective remedy, and it certainly facilitates the action of other remedies which are applied.

Does ringworm of the scalp ever get well spontaneously? This is a question which I do not think can in the strict sense be answered decisively. We know that the disease may last for years, and that it gets well spontaneously at puberty; but I am not aware of recorded facts which prove definitely that it undergoes spontaneous cure. At the same time, I am disposed to believe that it does so, and it is quite possible that many of the recoveries attributed to methods of treatment are really due to the fact that the remedies prevent the extension of the disease to unaffected hairs, and that the fungus, having exhausted the soil, or altered its soil, eventually succumbs. The question is well worthy of careful study and observation, and it seems to me that some of the remarks made by the distinguished French physicians, whose words I have translated in an Appendix, are specially suggestive in this direction.—*The Practitioner*, July 1887, p. 23.

69.—ON INGUINAL RINGWORM (ECZEMA MARGINATUM).

By GEORGE THIN, M.D., London.

This form of ringworm is so different from the two others (*Tinea tonsurans* and *Tinea circinata*) that it was first described by Hebra as a form of eczema under the name of *Eczema marginatum*. The term *marginatum* calls attention to a diagnostic point between the parasitic and a simple eczema. Koebner first showed that the disease is due to *Trichophyton*.

The tender skin of the inguinal region, and the moisture of the parts, favour the development of the fungus. Starting from the scroto-crural fold, the disease advances over the inner aspect of the thighs, and extends backwards over the gluteal regions. The large rings sometimes meet in the lower part of the lumbar regions, but usually do not extend so far, the affection limiting itself to the moist skin of the inner aspect of the thighs. The affected surface is more or less red, sometimes very little so, and slightly scaly. The margin is abrupt, raised, and much more scaly than the centre. As in ordinary ringworm of the body, sometimes traces of previous margins are observed within the outer one.

The disease is very common in certain tropical countries, where it is usually known by a special name for each locality. Thus we hear of "Chinese ringworm," "Burmese ringworm," &c. As it is supposed to be, and probably is, conveyed by native washermen wearing drawers which have been sent to wash, it is also known in these countries as "Washerman's itch," "Dhobie's itch," &c. It sometimes causes considerable itchiness and irritation, and may last for many years; and, unlike ordinary ringworm of the body, is very rebellious to remedies.

In these respects it differs from ordinary ringworm of the body. It is also noteworthy that it is never endemic amongst a group of persons, as in a family or school, and is practically not contagious. The diagnosis is easy, and consists in the association of the abrupt raised margin of *tinea circinata* with the irritation, desquamation, and vesicles of eczema.

The treatment consists in the frequent and firm application of certain irritants. I am in the habit of prescribing washing with soft soap twice daily, and rubbing in Wilkinson's ointment, as modified by Hebra:—℞. Sulphuris sublimati, olei cadini, āā ℥iv; saponis viridis, adipis, āā ℥i; cretæ præparatæ, ℥ii ss. M. Ft. ungt. This treatment is somewhat painful, but any treatment that is effectual in this disease must stimulate with some severity.

Kaposi recommends the application of a 1 per cent. solution of naphthol in alcohol and a 5 per cent. naphthol ointment. Tar, iodine, solutions of perchloride of mercury, are all used more or less by practitioners, tincture of iodine, perhaps, more frequently than the others.

In obstinate cases the epidermis must be softened by applications

of soft soap, which are allowed to remain for some time on the skin. This treatment is, however, severe, and not to be begun in the first instance. After the malady is cured, the inguinal fold must be carefully kept dry, powder being freely used.—*The Practitioner*, Aug. 1887, p. 85.

70.—ON LICHEN ANNULATUS SERPIGINOSUS.

By JAMES NEVINS HYDE, M.D., Professor of Skin Diseases, Rush Medical College, Chicago, U.S.A.

[In this communication Dr. Hyde attempts the identification of a series of cases published in January last, by Dr. Colcott Fox, as examples at once of the *Seborrhœa corporis* of American dermatologists and of the *Lichen annulatus serpiginosus* of Sir Erasmus Wilson, the two names being regarded by Dr. Fox as convertible. Dr. Hyde expresses his personal conviction that the condition Wilson intended to describe will one day be recognised as a specific exanthem; he consequently cannot admit the identity of the two diseases, and relegates Dr. Fox's cases to the category of ordinary *seborrhœa corporis*, a comparatively common and trivial affection. We reproduce here Dr. Hyde's interesting account of the condition, which he holds has already been described by Wilson, under the name of *Lichen annulatus serpiginosus*.]

Laying completely aside, for the moment, the several names which have been employed in this connection, let the reader understand, clearly and without reserve of any kind, that there is a particular disease of the skin, *sui generis*, differing from all other cutaneous affections, shading, perhaps, into others at some points, but perfectly distinguishable by an expert in its specific identity, relatively rare of occurrence, and, under different titles, recognised, defined, and limited by a group of authors. This disease is characterised in both sexes, at a relatively early period of life, by a superficial efflorescence, displayed chiefly over the anterior and posterior surfaces of the upper portion of the trunk, less often over the extremities, in the form of multiple, discrete, and at times confluent, definitely circumscribed, ovalish or roundish discs, split-pea to large coin in size. They are slightly elevated, occasionally slightly depressed beyond the general level of the integument; and on careful inspection, these discs are seen to be made up of macules, papules, or maculo-papules, coloured in a faintly rosy, yellowish, tawny, or somewhat darker hue, and covered with typical, scanty, rather adherent, lightish-shaded, furfuraceous scales of pityriasic type. When these discs coalesce, the composite configuration is the resultant of the outline of the primary disc, which very often is a purely annular lesion with a cleared centre, at times a segment of a ring only.

The subjective sensations are moderate or quite severe pruritus, though it is rare to see the marks of traumatism by scratching upon or about the lesions. With this, there is rarely a slight pyrexia, but more often a distinct malaise, recognised by French authors under their comprehensive term, *courbature*. The disease, beginning with a sudden or gradual onset, seems to have a definite period of evolution and involution, lasting from a few weeks to not more than two or three months. The disease may be expressed in quite numerous multiple lesions over the chest, or in not more than eight to a dozen, of which number one or three may be seen upon the arms or upper thighs, and the rest irregularly scattered over the upper part of the trunk.

As to the matter of diagnosis, I now believe that, when this subject was first brought to the attention of the American Dermatological Association by my friend and colleague, Dr. Duhring, of Philadelphia, I had not recognised the identity of the disease. Since that date, a careful collation of all the phenomena, coming under my observation in a score of cases, has demonstrated the remarkable similarity of symptoms in all. Touching upon the subject in a late conversation with Dr. Duhring, I found that he agreed with me in believing that a typical case could be recognised by a single glance of the expert at the affected surface, so characteristic is the picture. The latter always particularly impresses me as to three points:

1. A delicate but distinct salmon hue of the discs, difficult to describe in words, but never seen in psoriatic lesions, or those of *tinea versicolor* or *tinea circinata*.

2. A decided tendency of the oval-shaped discs to arrange themselves over the trunk, with the long axis at right angles to the vertical axis of the body.

3. Occasionally only, a tendency to fraying of the branny borders of the disc at the line of the contour nearest the poles of the long axis, with a more clean-cut definition of the ring near the poles of the shorter, usually vertically disposed, axis.

Now this disease, of distinct lesions and probably specific character, has been given a number of names by the authors who have made a study of the subject; among the latter may be mentioned Gibert, Bazin, Hardy, Duhring, Horand, Weyl, and Behrend. If Wilson has not included this disease in his descriptions, I am at a loss to know an English author who has made record of his observation of it in person. The names used in this connection are "*pityriasis rosea*," "*pityriasis disseminé*," "*pityriasis maculata et circinata*," "*pityriasis rubra*," "*pityriasis circiné*," "*pityriasis maculeux*," and "*pityriasis pseudo-exanthématique*."

I am impressed with the conviction that the late Sir Erasmus Wilson observed this disease, and at least included it with others in his description of *lichen annulatus serpiginosus*, even though

his plates do not furnish an accurate portrait of what has been included, in the nomenclature of the American Dermatological Association, as pityriasis maculata et circinata. Wilson stated that the rings in his lichen, for example, were "numerous." This is true of the annular discs I have described above, but it is by no means true of the lesions recognised by Americans as characteristic of seborrhœa corporis. It is within bounds to say that a large number of annular lesions on the chest and back, even if otherwise resembling the patches of seborrhœa recognised upon the body, would by their number alone lead the expert diagnostician to be exceedingly cautious in declaring them to be seborrhœic in character. The lesions of seborrhœa trunci are in fact much more like those described by Dr. Fox as observed by him in his interesting group of cases. Often there are not more than two to six of these ringed patches, seen over the sternum, particularly in adults of both sexes; and, unless I err, more often in those of both sexes with a decided tendency to the growth of sparse long hairs in this region; they are pea to coin-sized, dull-reddish, greyish, or dirty yellowish in colour, covered with the characteristic greasy pellicles, more or less closely attached to the underlying integument. When removed with care, the stalactitic prolongations of the crust may be at times discovered on its under surface, resembling the same peculiarities in seborrhœic crusts removed from the face. The greatest possible contrast is therefore presented between the patient having a few of these patches on the front or back of the chest, and another patient, with the front, back, and lateral surfaces of the trunk plentifully sprinkled with the rings and discs of pityriasis maculata et circinata.

Again, in seborrhœa corporis, there is never the "rapid spreading of the rings" to which Sir Erasmus Wilson called attention in his description of lichen annulatus serpiginosus, the process, in the disorder first named, being always chronic in type and slow in evolution. Sir Erasmus also called attention in the malady, or group of maladies, which he termed lichen annulatus serpiginosus, to a "very considerable itching," which is far more true of the pityriasis described above than of any variety of seborrhœa; and, lastly, employed the very phrase to characterise his lichen which should be used of the pityriasic discs I have described above, namely "furfuraceous exfoliation." The pellicle formed in seborrhœa of the trunk is never strictly furfuraceous in character, but breaks up into minute greasy cakes rather than branny scales. Wilson used the word "mealy" in another connection to describe the character of the exfoliation in the cases under his observation. He mentions further the "yellowish" tint of colour, the "smooth and uniform area rarely presenting any trace of pimples," and the "broken cuticle" at the margin, which I have described above as a species of "fraying."—*Brit. Med. Journal*, April 2, 1887, p. 722.

71.--ON SOME AFFECTIONS OF THE SKIN DUE TO THE BROMIDE SALTS.

By A. D. BLACKADER, M.D., Lecturer on Diseases of Children in the McGill University, Montreal.

[Dr. Blackader's communication opens with the narrative of an interesting case of "Bromide Eruption," of which we can reproduce only the leading points. A stout, well-built girl of fifteen had been subject for two and a half years to epilepsy, during which period she had been constantly taking the bromide salts in doses of from thirty to forty grains in the day. The earliest cutaneous complication was a slight acneiform rash on the face; this was followed in two months—during which period the bromide salts were still being administered—by a more serious lesion occupying the skin of both legs. On the right side, about the middle third of the extensor surface, was a large patch $4\frac{3}{4}$ inches long and $3\frac{1}{2}$ inches broad, with an abrupt edge raised nearly a centimetre above the surrounding skin. Below, and coalescing with it at its upper margin, was a smaller one similarly raised. On the left, four smaller patches occupying the posterior aspect of the limb. The patches had somewhat the appearance of tubercular syphilide; their surface was covered with a thick irregular scab, on raising which a moist red surface was exposed, very sensitive, and not unlike in appearance that of exuberant granulations. For nearly half-an-inch surrounding these patches, the skin was red and painful.]

The frequent occurrence of cutaneous eruptions after the prolonged administration of the bromides is well known. The exact manner in which this action is produced has been disputed, but latterly Guttman has confirmed the fact that elimination of the drug takes place in part through the skin, by demonstrating the presence of bromine in the secretion of the pustules in a case of pustular acne occurring during the administration of potassium bromide. There can be little doubt, therefore, that in this elimination morbid changes are set up in the sebaceous glands, and that to this rather than to any trophic neurosis the majority of the eruptions are due.

Veiel, in an interesting paper on these eruptions, states that in his experience it is impossible to foretell what size of dose may give rise to a rash. In some cases it is produced by very small doses, in others only with very large ones, while the skin of a few appears quite insusceptible to the action. The two sexes appear to be equally predisposed, and age and the general health of the patient has little influence; the eruption appearing as often in the infant as in those advanced in years; in the robust and florid as in the weak and anæmic. Discontinuance of the drug is in general followed by a rapid diminution of the rash.

Very rarely has it been noticed to make its appearance only some days after the drug has been stopped, and then to persist for weeks.

By far the most common eruption is the *acneiform*, which is observed more or less in about 50 per cent. of all cases treated by the bromides. A thickened skin, greasy from excessive secretion of sebum, or an integument on which there are comedones or pre-existing acne, are said to predispose to its occurrence. The locality selected is more extensive than in *acne vulgaris*. In addition to appearing on the face, chest, and shoulders, the bromide acne shows a decided preference for parts where hairs abound. It is frequently observed in the hairy scalp, the eyebrows, and the hairy parts of the thighs and legs. It may occur even over the whole body. Sometimes it seems first to affect tissue which has been the seat of recent inflammatory action, as in the case of an infant reported by Dr. Crocker, where the eruption appeared first on the site of a recent vaccination mark, and a similar case referred to by Dr. Barlow, where it was first observed on the site of a recent blister, but in both cases it spread afterwards over the body. The *papular* form is the most common, but the *pustular* is of frequent occurrence. In development it resembles acne proper, but its distinguishing feature is its increase or diminution when the dose is raised or decreased.

Closely allied to the above are those cases referred to by Duhring as *confluent and molluscoid acne*. Voisin describes some as occurring in the form of oval-shaped tumours or elevations from 2 to 5 cms. in diameter, of a rose or cherry colour, with indurated base, occurring exclusively on the lower extremities, and particularly on the calves of the legs. They are covered with small acneiform pustules, from which cream-like contents exude, and are very painful when touched. Should the drug not be discontinued, they may become converted into foul indolent ulcers. Dr. Cholmeley has described a somewhat similar case where the eruption occurred on the face, and on the front and side of each leg. Veiel states that he has seen some cases of eruption in the form of wheal-like elevations on an erythematous base, very sensitive, and varying from the size of a shilling to a florin, which changed by degrees into a wart-like excrescence, and afterwards went on to ulceration. Neumann has also described a similar affection.

In addition to these, Veiel describes an *erythematous* form attended by fever and great local pain. It was absolutely limited to the lower extremities, but was very diffuse over them. Bedford Brown has also described some cases of rubeola in children apparently due to the action of the bromide of potassium. Instances resembling *erythema nodosum* have also been noted. The *furuncular* form of eruption is much more common than the last, and has been noted by many authors. Boils and carbuncles may form.

in any part of the body. Occasionally spots of acne have been observed to become true boils, and later on, should the drug not be discontinued, are converted into large ulcers with conical scabs like rupia.

In a single case the *eczematous* form has been noted. Voisin observed a weeping eczema appear on the thighs after the bromide of potassium had been administered for over a year.

Large *warts* resembling those met with on the hands of the young, were observed in one instance by Veiel to appear on the face and legs of a boy of sixteen shortly after he commenced taking the bromide.

The leading indication in the treatment of all these rashes is the suspension of the drug. Where that is not deemed advisable Gowers recommends the addition of Fowler's solution, which appears to be of service at least in the prevention of the eruption. Prowse strongly recommends a solution of salicylic acid in water (gr. i- $\frac{3}{4}$), and states that by this means he was enabled to heal a severe bromide rash while continuing the administration of the drug.

The question has been asked whether any relation can be traced between the appearance of these rashes and the cessation or less frequent return of the epileptic attacks. Veiel states that there is none. Dr. Buzzard believes that the presence of the eruption indicated beneficial effects of the remedy with respect to the original malady.—*Canada Med. and Surgical Journal*, April 1887, p. 517.

72.—ON TRANSPLANTATION BY EXCHANGE.

By C. B. KEETLEY, F.R.C.S., Senior Surgeon to the West London Hospital.

The title of this paper is the name I would apply to an operation by which two portions of living tissue are made to exchange places. The following case will illustrate the procedure and the kind of circumstance in which it may be advantageously employed.

In March, 1886, a female infant, aged two or three weeks, was brought by a neighbour of its mother's to the West London Hospital with a request that a hairy mole covering nearly the whole of the left cheek might be removed. I explained that the result would be a contracting scar worse than the mole, and sent the child away. Next week the neighbour returned, and said that the mother could not endure the sight of the large mole, and would prefer a scar. I placed the infant's arm against its face, and was rather dismayed to see that all the skin of the outer side of the upper arm, from the shoulder down to the elbow, would be required to replace the mole should I cut away the latter and then fill in the flap by transplantation. Upon reflection, I resolved to *exchange*

the hairy mole of the face and the smooth white skin of the arm. The advantages of this plan are obvious, and especially the consideration that the mole would give useful skin for the upper arm; but it will be better to defer enumeration of them till the operation and its results have been described.

On April 2nd, the little patient being anæsthetised, I first thoroughly cleansed and disinfected the cheek and arm with liquid potash soap (Duncan's) and solution of perchloride of mercury, successively. Next I marked out the flaps in the following manner. A straight ink-line was drawn from A to B (see illustration). The arm was then placed in comfortable position, arching upwards over the face and head. The wet ink on the line A B printed a second line on the arm at C D. A paper pattern of the flap to be removed from the face was cut, and with its aid an exactly similar flap was marked out on the arm, so that C D H G on the arm correspond to B A E F on the face, each letter to each respectively. Though this is a very simple matter, some care is required in practice to avoid confusion. The knives, scissors, sutures, needles, forceps, &c., to be used lay in a tray of carbolic lotion, but were dipped in boiled (not boiling) water immediately before use and replaced in the carbolic tray when not actually in use. The object of this was to take care that no erysipelas or other specific infection should be carried by the instruments, and yet to prevent the flap and raw surfaces from being irritated by the carbolic. The sponges had all been thoroughly disinfected, although they were now placed in water only. The face flap was reflected first. It included the subcutaneous fat proper, which had to be carefully separated from the cushion of fat which swells out into the middle of the cheek from beneath the



ramus of the jaw; and it was necessary also to cut very carefully and see everything which was divided near the parotid and some of the branches of the facial nerve. The structures in an infant's face are, of course, comparatively small and near to each other, and the amount of fat is, comparatively, very considerable. Almost all the cutting throughout the operation was done with scissors, and

not very sharp ones either. The main object of this was that

bleeding might stop rapidly, and thus dry surfaces be obtained speedily—a very important matter in a plastic operation. This object was entirely attained in the case I am describing. The arm flap also included the fat down to the deep fascia. As I thought it would be somewhat difficult to put in the sutures when the arm was up against the face, I applied entirely distinct, but corresponding, sutures to the arm flap and edges of the arm wound on the one hand, and to the face flap and edges of the facial wound on the other, and afterwards lifted the arm to the head, placed the arm flap in the facial wound and the face flap (containing the mole) in the arm wound, finally using the ready-placed sutures as “tags,” which, twisted together each to each, fixed everything with absolute security and accuracy. But this plan, though excellent in suitable cases, was scarcely necessary in this, and was, indeed, a little too elaborate. The angles between the arm and face, near the flaps, were now packed with iodoform gauze, and the whole arm was most carefully fixed to the head and neck with good strapping. Finally, over sufficient flannel and wadding, the head and thorax and *both* arms were rigidly secured in plaster-of-Paris. The whole had somewhat the appearance of a large egg with an infant's face peering out of a hole near one end and its hips projecting and legs kicking freely out of the other end. The child's conduct showed that it was free not only from pain, but even from discomfort.

The following notes of the after-treatment were made by the house-surgeon, Mr. Harold Des Vœux:—April 9th (seven days after operation: Part of case removed; dressings found to be very offensive. Both flaps looking well, though the face flap is red and the stitches along its anterior border have given way. Dressed as before.—13th: Whole case removed and bases of flaps cut and sutured respectively to face and arm. This, of course, liberated the arm from the head and severed each of the two transplanted flaps from its original connections, completing the exchange of places. At the lower and outer border the flap upon the face was found to be not adherent and partially redundant, owing to cicatricial contraction of the face wound; it was therefore pared to fit, and re-sutured to the face. Wounds dusted with iodoform; both arms strapped to body to prevent child from scratching the wounds.—20th: The face flap not fitting perfectly in one or two places, it was there refreshed, adjusted, and fixed with fine horse-hair sutures.

The result bids fair to be excellent, though not perfect, owing to the fact that a certain amount of cicatricial contraction had taken place in each wound. I feared this would pull the mouth to one side eventually; but it appears now, nine months afterwards, that this has not occurred. The following account of the present state of the case is written by Mr. C. H. Taylor, house-physician to the:

West London Hospital, who has just visited the little patient to report on it:—"The child is much fatter and healthier in appearance; the transplanted skin on the face is of the same colour and appearance as the rest of the face; all that is noticed is an incomplete irregular ring of depressions or dimples and linear scars, these being slightly paler in colour than the surrounding skin. At the outer and lower edge nearest the ear are two small patches of mole, one about the size of a pea and the other smaller; they are pale brown in colour, and have a few silky hairs growing from them. The arm is much fatter, and the mole upon it is more raised and movable than it was upon the face, but it remains the same in size."

There can therefore be no doubt about the satisfactory results attained by this mode of operating, which is, to the best of my belief, new. It is obviously a very great advantage to be able to anchor, so to speak, the arm to the head by the strong sutures which unite the former to the transplanted mole. It is thus rendered needless to put any except fine sutures into the face. Secondly, the bases or necks of the two flaps, lying with their raw surfaces in mutual contact, help to keep up each other's warmth and nutrition. Thirdly, not only is the risk of sloughing diminished, but should the part removed from the arm slough, the mole saved from the face is there covering the arm wound with healthy and supple, though discoloured and abnormal, skin. I cannot help thinking that this plan of preserving what might be termed "healthy disfigurements" of the face, such as hairy moles, and *exchanging* them for skin taken from parts usually hidden by the clothes, to be a great improvement on the practice of excising such moles and wasting them.—*Lancet*, Feb. 19, 1887, p. 363.

73.—ON CONDITIONS ALLIED TO RAYNAUD'S DISEASE.

By JONATHAN HUTCHINSON, F.R.S., London.

Under the name of Raynaud's disease we recognise a condition of enfeebled circulation in the extremities which gives a tendency to symmetrical gangrene of the tips of the digits. There are other conditions of altered nutrition in the same parts, and in association with a similar class of causes, but in which gangrene is not threatened. I have described what I ventured temporarily to name "last joint arthritis"—a very peculiar affection, in which the terminal joints of all the digits suffer from disorganising inflammation of a more or less rheumatic type. It is definitely influenced by weather and by exposure to cold, so much so that it might be considered a sort of articular chilblain. It is usually associated with inherited gout, in combination with feeble circulation and liability to chilblains.

In the following case we have neither gangrene nor arthritis, but

a peculiar erythematous inflammation beginning at the digit-tips, causing destruction of the nails, and gradually spreading upwards. Miss P. was sent to me by my colleague, Mr. Couper. Her age was forty-one; she inherited gout, was a total abstainer, and of decidedly feeble circulation. Her fingers had for long been "liable to die and become white." For fifteen years she had suffered much from redness of the fingers and toes, which was worse in cold weather, and which she had considered chilblains. In childhood, however, she had not suffered from chilblains more than others. Five years ago her nails had begun to suffer. Most of them when I saw her were destroyed, being represented only by thin horny lines which crossed the nail lengthwise. It did not appear that the nails had ever been thickened. They became thin and fibrous. The whole finger-tip was withered. The fingers from the tip almost to the knuckle were of dusky red colour, smooth, glazy surface, with some slight tendency to desquamation. There was no moist eczema, the condition resembling rather lupus erythematosus. The redness was, however, not well margined, as in the latter malady, and neither the face nor the ears were in any way affected. I saw the patient on a warm day, and was told that in cold weather the swelling was much greater. The toes were in exactly the same condition as the fingers, and although some suffered more than others, not a single digit had escaped.

By some the condition which I have described would be diagnosed as dry eczema, by others I think it would be considered erythematous lupus, and others might be content to name it chronic onychitis. Undoubtedly it is much like all these diseases, and partakes of the features of all. Especially, perhaps, does its external resemblance come near to eczema. We know, however, of no type of eczema which attacks all the digits at once, and restricts itself to them whilst persisting without cure for many years. Clearly the most important feature in the case, that which leads us nearest to the cause, is the fact of the disease attacking the tips of the digits and having been preceded by the liability to "die." Had the patient in the earliest stage been sent to live in a warm climate, not improbably the disease would never have progressed. If this be true, the condition is essentially a chilblain, that is, a chronic erythematous inflammation of a peripheral part induced by cold; still it differs from chilblains, for the latter do not usually destroy the nails, do not persist continuously all the year, and seldom attack all the digits at once and in the same degree.

If I were to attempt a pathogenetic analysis, it would be this: Inheritance of gout, attended, as it so often is, by peculiarities of circulation; inheritance of tissues prone to chilblain-inflammation; exposure to a cold climate; and, finally, enfeeblement of general vigour by too abstemious regimen.—*British Medical Journal*, May 28, 1887, p. 1149.

SYPHILITIC AFFECTIONS.

74.—ON THE TREATMENT OF GONORRHOÆAL INFECTION IN WOMEN.

By WILLIAM JAPP SINCLAIR, M.A., M.D., Physician to the Southern Hospital for Women, Manchester.

[The last of a series of articles, dealing in the most exhaustive manner with the clinical, therapeutical, and even moral aspects of Gonorrhœal Infection in Women, appears in the Medical Chronicle for Oct. 1887. The object of the author has been throughout to show that almost all, if not all, the inflammatory diseases of the uterus and its appendages are due to gonorrhœal infection, either immediately or remotely preceding their appearance. As to the extent to which gonorrhœal puerperal affections occur there is great difference of opinion, but pelvic peritonitis, salpingitis, and barrenness after one pregnancy, not unfrequently occur. The whole series of articles is well worth the careful study of all who are called upon to deal with such conditions. We can reproduce here only Dr. Sinclair's remarks upon treatment.]

The treatment of gonorrhœal disease in women seems a rather large and complicated subject for exposition. But if we set aside mere theoretical details, and deal with that which concerns only cases met with in practice, the varieties of treatment that can be reasonably employed shrink into comparative insignificance. As a specific disease there is little or no scope for treatment of it in the female; we have only the opportunity of trying to minimise the consequences.

Gonorrhœa as a local disorder requires topical treatment; as a specific disease, depending for its development and symptoms upon the growth of a micro-organism, it requires for its treatment the employment of the antiseptic and astringent class of chemicals, which are known to destroy the ordinary micro-organisms.

However, if we should meet with cases in the early stage, before the uterus is invaded, we must be prepared to act energetically, and the question arises to what is best to be done. When men become more impressed with the serious nature of the disease, it will probably be the rule to see cases in the early stage. Schwarz of Halle, who speaks so as to give the impression of having had a large experience of purely vulvo-vaginal gonorrhœa, describes his method of treatment in the following terms: "First of all, the vulva and vagina are thoroughly cleansed of the adhering secretion by means of a 1 : 1,000 sublimate solution, then with the help of a Simon's speculum, the vagina and vulva, including every fold and recess, are energetically swabbed with a dossil of cotton-wool soaked in a 1 per cent. solution of the sublimate, and rubbed with

it for several minutes, so that the superficial layers of the epithelium containing the gonococci are removed. The Simon's speculum, or some other with separable blades (such as Bozeman's, &c.), is essential for the purpose in view; by this means it is possible to distend the folds of the vagina to their utmost extent, and to obtain a complete controlling view of the whole process, so as to avoid missing any of the diseased patches. Special care is taken with the introitus, which contains numerous folds.

"The next step is copiously to dust over the vagina and vulva with iodoform, which is still more effectively applied by rubbing it into the mucous membrane with the tip of the finger.

"To complete the process, the vagina is with moderate firmness packed full of iodoform gauze.

"If the treatment is very painful, a thing which depends upon the intensity of the disease process, and the idiosyncrasy of the patient, a narcotic or anæsthetic must be administered.

"The process is of value only when thoroughly carried out, but then it is certain to succeed.

"If, as is usual in rubbing the vagina, there occurs extensive capillary hemorrhage, it is only a favourable sign, inasmuch as it shows that at the bleeding points the diseased epithelial covering is for the most part removed, and, at the same time, a large number of the superficial, perhaps diseased, capillaries are destroyed.

"The iodoform gauze is permitted to remain for three or four days, and then the whole process is repeated with the same thoroughness, and over the same area.

"After four or five days more the gauze is finally removed, and then, from eight to fourteen days, the patient carries out a copious irrigation of the vagina with a sublimate solution of 1 in 2,000."

This process was hardly ever known to fail. The vagina is red and raw after the second tampon has been removed, and there is usually a copious purulent discharge, "but the gonococci are annihilated, and have for ever vanished."

Schwarz goes on to recommend the use of iodoform to the vulva, in order to eradicate the disease from Bartholini's glands, and he further employs compresses soaked in warm sublimate solution, with the same object.

As to the treatment of the disease after it has reached the uterus, I can speak with confidence. In order to be effective treatment must be energetic and immediate. If you have reasonable cause for belief, from the absence of thickening of tissues, or of pain on either side of the uterus, that the disease has not reached the tubes, there is fair ground for hoping to prevent the worst complication of all. Nothing should be done that could increase the congestion of the uterus and interfere in any way with the uterine canal until the moment the germicide is to be applied. Therefore you cannot stop to dilate with tents, the interference

and delay would be fatal to success. Only once, when the hollow sound would not pass, I have rapidly dilated, wounding the mucous membrane, before applying the germicide. This is an undesirable incident, although it does not necessarily do harm. My routine treatment has been to steady the uterus by holding its anterior lip with a vulsellum, after exposing it well with a duck-bill speculum, and to introduce to the full length of the canal a Fritsch-Bozeman sound. The sound is kept in a hot disinfectant, and at the last moment the air in it is expelled and replaced by the ordinary tincture of iodine, which is injected from an ordinary two-ounce glass syringe. When the sound is in position in the uterus, the tincture is slowly injected as long as it continues to flow from the opening in the outer tube of the instrument. It is almost always necessary, however, to withdraw it, in order to clear it of coagulated blood and mucus before you can efficiently complete the application; and this is a serious defect in an otherwise satisfactory instrument. The vagina can be protected from the action of the returning fluid either by rapid and frequent changes of pledgets of cotton-wool, or by constant irrigation by gravitation with warm water.

The applications should be repeated three days in succession, if no symptoms arise. A strip of lint wrung out of sublimate solution is left in the vagina for two or three hours to afford the patient time for a rest, and then a copious vaginal douche with a weak sublimate solution is given, and this is repeated before the next intra-uterine application. The Fritsch-Bozeman sound is laid aside for several days after the third application, and the vaginal irrigation is continued, careful note being taken of both the axillary and vaginal temperature. When the eschar or iodised uterine lining has had time to break down and get more or less expelled, the process is repeated. So far, I have seen no harm come of the intra-uterine applications, and I am confident that the proceeding has saved several patients from a further spreading of the disease. Tincture of iodine is so far the only fluid I have employed. Perhaps a spirituous solution of corrosive sublimate might be used with advantage.

Schwarz employs, at the stage of the disease under consideration, a process of constant irrigation of the whole uterine canal with carbolic acid or corrosive sublimate solution. He mentions some details of three cases in which the process was most successful. The irrigation is carried on for two to four days through a modified Fritsch's sound, and the return fluid is collected and drained away by means of a special apparatus.

So much must serve here as suggestions for the treatment of the uterine stage—a phase of the disease also comparatively rarely seen. I must confess that the opportunities which have presented themselves to me have been too few for trying variations in treat-

ment. In the vast majority of the cases which I have seen the disease had already spread beyond the uterus by the time the patients applied for advice. When the disease has advanced beyond the reach of topical treatment, it must be dealt with on a totally different plan. Treatment cannot now be too cautious. Nothing should be done that could possibly increase the blood-supply to the internal sexual organs, and special care should be taken when the menstrual periods are impending. Such treatment must vary according to the apparent severity of the attack, but it should err, if at all, on the side of caution. It must be remembered that some pathological conditions of the ovary may already exist which may greatly exaggerate the effects of the infection. The patient's sexual health is almost certainly about to be ruined, but her life is also in danger, whatever Snger and others may say to the contrary. If the ovaries are healthy and the tubes do not become sealed there is comparatively little danger to life, and in the later stages all manipulations, which might cause the slighter adhesions of the fimbriæ to give way by increased peristaltic action of the tubes, should be avoided. Should even a comparatively small amount of fluid have collected in the tubes undue manipulation may cause a rupture, followed by a fierce conflagration over the pelvic peritoneum.

It is usually necessary to keep down the vaginitis by a *warm* douche, and this is really all the local treatment which I practise, beyond poulticing for the perimetritis in the acute stage. The warm water may have some soothing effect. The *hot* douche may be injurious. In one of my early cases, which ended fatally, I have always blamed the hot douche for again lighting up the inflammatory process. In order to prevent the uterine discharge from keeping up the disease in the lower portion of the genital tract, I direct the patient to use a tablet of corrosive sublimate and ammonium chloride. Each tablet contains two grains of sublimate, so that when one of them is broken and thrown into a pint of warm water, the resulting solution is practically the strength of 1 in 5,000. A solution prepared in the same way may be also used in the earlier stages of the disease, concomitantly with the intra-uterine applications. This treatment is continued until the dangers of the acute and subacute stages are over, and it is time to endeavour to remove the resulting exudation by the iodised tampons, to break down adhesions, or to prevent deformities.

The later stages of the disease, those of the complications and consequences, must be looked upon as a separate chapter in gynæcology apart to a large extent from their primary cause. Gonorrhœa in a woman when it has once passed beyond the uterus is an incurable disease; such an outrage as the invasion of the tube by a pathogenic organism, Nature never forgives. Just as a burn inflicted on a child that falls in the fire is followed by a

deforming cicatrix, the effects of which may ultimately be more or less relieved by surgical measures, so the consequences of gonorrhœal invasion of the tubes and peritoneum are adhesions and deformities which cannot be cured, but whose miserable consequences may be sometimes minimised by operative gynæcology.—*Medical Chronicle*, Oct. 1837, p. 8.

75.—ON PRECOCIOUS GUMMATA.

By R. W. TAYLOR, M.D., Surgeon to the Charity Hospital,
New York.

[Dr. Taylor embodies in his valuable paper the narratives of a selected number of cases, from which he traces an exhaustive description of these not common lesions. The following is a reproduction of the main points in the article.]

The close and widespread study of syphilis within the past fifteen years has conclusively shown that the old and dogmatic division of the disease into three sharply marked periods must soon be very much modified, or perhaps even discarded, and that, although the terms primary, secondary, and tertiary, as applied to stages of syphilis, present the advantage of clearness and simplicity in study and description, and may even be clinically true as regards a large number of cases, yet there are very many in which such a division is inappropriate, since we observe in some the so-called tertiary lesions in the secondary period; in others seemingly secondary lesions in the tertiary period, and perhaps coexisting with well-marked lesions of that period; or, again, cases of tertiary lesions concomitant with secondary lesions. To hold, then, that superficial lesions belong to and are only found in the early or secondary period, and that they are followed later on by lesions involving the tissues more profoundly, is in reality to sacrifice facts for simplicity of description.

My studies have convinced me that there are three forms of the precocious gummata: The first, the generalised form; the second, the localised form; and the third, the neurotic form, which in some of its features resembles erythema nodosum. Of each of these three forms, moreover, there are two varieties: a resolute, or non-ulcerative, and an ulcerative variety.

The clinical history of the generalised form of precocious syphilide then is as follows: As early as the eighth week of infection, rarely earlier, the patient notices either small circumscribed swellings under the skin, generally unattended with pain and only perceptible to the touch, or this stage of the eruption may escape him and his attention is at first arrested by a number of bright red spots. Quite frequently the patient comes with the statement that blind boils are breaking out all over him. Examined early in their history these gummata are found to be round tumours of the

size of a bean, deeply set in the skin, having a bright red colour which, at the first, is dissipated by pressure, but becoming deeper, more sombre and permanent in colour later on. They increase peripherally quite rapidly, so that within a week or ten days they may attain an area of an inch, or an inch and a half. Then again their growth may be slower. In general a goodly number of tumours appear scattered symmetrically over the whole body. As they grow they are followed by new ones which come along with greater or less rapidity, in proportion as internal medication is pushed. If a correct diagnosis is at once made and appropriate treatment instituted, the first crop may be the only one and that may be promptly dissipated. Unaffected by medicine, their evolution continues and in a fortnight the arms, forearms, perhaps the scapular region, not infrequently, but not as a rule, the back and anterior surface of the trunk, the gluteal regions, thighs, and legs are invaded by these tumours.

The course of these gummata is, in general, quite regular and not subject to great variation. When developed they present a quite firm sensation and this may be termed the period of condensation. As they grow older the red colour becomes rather coppery, and while the periphery of the tumour may or may not seem firm, the central portions appear softer to the touch, conveying the impression that the tissues are permeated with a thick fluid. This we may denominate the stage of softening, and is found to be of varying degrees in different cases. In some instances there is simply a soft and yielding sensation conveyed to the finger tip, while in others a feeling of slight fluctuation is noticed. To the inexperienced in the latter case these tumours may give the impression of being abscesses and suggest the use of the knife. In the majority of the cases there is not abscess formation, but rather a liquefaction of the gummy infiltration, which is in general promptly absorbed. The time occupied in the full development of these tumours is usually from ten days to two weeks, and after that their period of duration is variable. They may, under treatment and care, promptly retrogress, and again may remain in an indolent condition in the second stage indefinitely. The traces left by them are generally very slight and not permanent, being simply slight hyperæmia and scaling and coppery pigmentation. Then again, in long-standing resolute cases, after absorption has taken place distinct loss of tissue may be noticed in a depressed cicatrix, which, however, is not as profound as those left by the gummata of later periods. Not uncommonly, new and sparse crops of tumours appear while the general eruption is in process of absorption.

Having thus described the non-ulcerative or resolute form of this very precocious gummatous eruption, a few words will suffice to bring out the features of the ulcerative variety. While in the first variety there is usually little or no tendency in the tumours to

necrobiotic action, in the second variety this condition is seen quite early. The stage of condensation is very short, and softening in a marked degree is observed in a few days. The centre of the tumours assumes a dark red colour in one or in several spots, and a sensation of fluid under the epidermis is distinctly made out. Then slight ulceration may occur in spots, often at the openings of the hair and sebaceous follicles, and very soon the epidermal roof of the tumour melts away, and we soon see the gummatous ulcer with its slightly thickened, reddened, undermined, and perhaps everted edges, and its floor of a greenish-red, bathed in an unhealthy sanious pus.

Usually there is no difficulty of diagnosis of this variety of precocious gummata. The infection is so recent that a history of syphilis is easily obtained, and then all doubt as to the nature of the tumours is removed. I have seen them, however, mistaken for aborted furuncles and regarded as rheumatic tumours, as scrofulous swellings, and in a case in which the initial lesion was seated on the index finger and was accompanied by severe constitutional symptoms and an active angio-leucitis of the arm, they were thought to be the result of purulent infection.

In the localised form the clinical history is similar to that of the first variety. The appearance of the tumours is the same, except they are usually larger, perhaps not as much elevated as those of the first form. There is the same stage of condensation, which is slightly longer, then follows that of softening, which is even more aphlegmasic than in the first form. On the legs such complications as chronic eczema, phthiriasis, œdema, varicose veins, and erysipelas, often much modify and intensify the course of these tumours. If resolution takes place, the same process and features are observed as I have already described. If ulceration occurs, we find the same softening in one or more central spots, which become of a deep red or black colour, then the gradual melting away of the skin until the well-marked gummatous ulcer is left. As in the first variety all the tumours may undergo this necrobiotic action, so in this form one or more may succumb, and generally those on the legs. The resulting ulcers are usually large and deep, and correspondingly slower in healing. On the legs this eruption is frequently accompanied by a sensation of uneasiness and heat, and locomotion is more difficult. Elsewhere little, if any, discomfort is experienced, except on the forearms, where a feeling of tension is often complained of.

In general, the diagnosis of this form of syphilide is easy, particularly when the tumours are numerous, and symmetrically distributed. In the cases in which the tumours are sparse and localised, errors in diagnosis are not infrequently made. It is important to bear in mind that the regions of the head and face are particularly susceptible to this form of precocious syphilide. When thus seated

in these regions, it is quite frequently found that there is also infiltration into the pharyngeal walls, and perhaps also into the mucous membrane of the mouth.

The clinical history of the neurotic form of syphilide has an individuality of its own. In the very early months of the diathesis, either in the stationary period of an early syphilide or at its decline, generally preceded or accompanied by severe neuralgic symptoms involving the facial or cranial, intercostal, anterior crural or, in fact, in any cutaneous nerve, by severe cephalagia, continuous or nocturnal; by rheumatoid pains in muscles or joints, and by general malaise and debility, this eruption makes its appearance with more or less promptitude and develops quite rapidly. In some instances the invasion is very acute, so that at the end of a week we may find fully developed tumours an inch or two long, in others and in the majority of instances the development is slower and nearly two weeks elapse. Besides the general neuralgic symptoms, local pains on the site of the lesions or in the whole territory on which they are developed are experienced. These may be continuous or intermittent, and in some cases are as excruciating as in severe herpes zoster.

The eruption consists of two orders of lesions: First, tumours or nodosities seated in the subcutaneous tissue and freely movable under the skin and over the fasciæ, though as they increase they may contract adhesions on both surfaces; second, oval or round tumours, or irregular plaques from fusion of tumours. In my experience the subcutaneous nodosities occur much less frequently than the tumours, while Mauriac seems to regard them as almost constant accompaniments to the eruption. The tumours begin by infiltration in the deeper portions of the skin and its contiguous connective tissue. When first seen they are of a bright red, rather sharply circumscribed, and painful. They quite rapidly increase in size into round or oval swellings, slightly raised and convex. In some cases the bright red rapidly becomes darkened until a blackish-red or decidedly ecchymotic appearance is seen, while in others it is of a very deep red, similar to what we see in erythema nodosum. In some cases again the red centre pales and becomes the colour of white wax or of a billiard ball, while the deep red border remains in various stages of intensity, consisting of a comingling or play of colours such as we see following a bruise or erythema nodosum. In most of the cases resolution takes place, and there are but two stages—the first, that of condensation; the second, that in which softening takes place, which may, but does not, invariably end in resolution.

In all cases of precocious gummata, the use of iodide of potassium is indicated, either combined with a mercurial or with the use of inunctions of mercurial ointment.—*International Journal of Medical Sciences*, July 1887, p. 53.

AFFECTIONS OF THE EYE AND EAR.

76.—ON STATE OF THE PUPIL IN VARIOUS CONDITIONS.

By WILLIAM MACEWEN, Surgeon to the Royal Infirmary; and to the Children's Hospital, Glasgow.

[In an interesting paper Mr. Macewen gives a brief outline of the physiological phenomena pertaining to the movements of the pupil, and presents a series of personal observations. The article concludes with a tabular arrangement of the Conditions under which Myosis and Mydriasis Occur, as follows:]

Myosis Occurs under the following Conditions:

1. When a bright light acts upon the retina.
2. Accommodation for a near object.
3. Rotation of the eyeball inward.
4. Local irritation or painful affections of the eyeball.
5. Irritation of the oculomotor nerve.
6. Paralysis of sympathetic roots of lenticular ganglion or trunk of sympathetic in the neck. In paralysis of the fifth there is myosis and inflammation passing on to destruction of the eyeball.
7. Paralysis of the cilio-spinal region of spinal cord. All affections which destroy the cervical spinal marrow and intercept its conductivity produce congestion of the face and contraction of the pupils. In neurosis, which suspends or diminishes the tone of the sympathetic or spinal axis.
8. Encephalic congestion, such as: obstacle to return of blood in jugulars; venous congestion due to cardiac causes; active hyperæmia, plethora, fevers, pneumonia, hepatitis, &c.; when animal is suspended by the heels; in early stages of meningitis and encephalitis; in acute mania with marked activity of the cerebral circulation: in chronic mania pupils are variable, when contracted are said to indicate supervention of paralytic dementia.
9. During sleep; some believe this to be due to the congestion of the cerebral vessels and those of the iris (Mosso); others, to the inward rotation of the eyeball.
10. In the early stages of cerebral tumour.
11. In small hemorrhages into the cerebellum, contraction of the pupil on same side as lesion ensues.
12. Electrical stimulation of the angular gyrus frequently causes contraction of the pupil.
13. During forced expiration, when the eye is at the same time passive. Also generally seen during the period of apnoea in Cheyne-Stokes respiration.
14. Convulsions arising from meningo-encephalitis are said to be accompanied by myosis, while in convulsions due to epilepsy and in epileptiform fits they are usually accompanied by mydriasis.

15. When the eye contracts on accommodation to a near object, yet does not contract to light, this indicates a lesion situated between the corpora quadrigemina and the oculomotorius. This affection is known as the Argyle-Robertson symptom. It is seen in locomotor ataxia and occurs in the progressive paralysis of the insane.

16. During uræmic coma.

17. Myotics: physostigmine, nicotine, pilocarpine, morphine, muscarine.

Mydriasis Occurs under the following Conditions:

1. In darkness or in subdued light.

2. Accommodation for distant objects.

3. Rotation of the eyeball outward.

4. In forced movements discharged from the medulla: vomiting, swallowing, chewing, forced respiration.

5. Paralysis of the oculomotor (accompanied or not by immobility of eyeball, external strabismus, diplopia, &c.)

6. Destruction of the optic: amaurosis. When unilateral, associated movements continue.

7. Irritation of sympathetic: powerful impressions on sensory nerves; strong moral emotions, mental pain, grief, fear; neuralgia of the fifth nerve.

8. Irritation of the spinal cord, especially ciliospinal region.

9. Encephalic anæmia: In all cases where there is reflex contraction of the vessels of the head; when loss of blood from the body is excessive; obstruction of the carotid arteries; in thrombosis of brain sinuses; dilatation of mesenteric vessels when extreme; syncope, intense cold, rigors; dyscrasias of the blood, convalescence, cachectic conditions; asphyxia, epilepsy, in certain stages of these affections.

10. Pressure of cerebrum when great in amount, as from hemorrhage, neoplasms, &c. In the last stages of meningo-encephalitis.

11. In cerebral softening. In acute dementia (œdema of cortex cerebri) observers state that the pupils are invariably dilated (Hutchinson).

12. In idiots the pupils are generally dilated.

13. During deep inspiration, generally in respiratory period of Cheyne-Stokes breathing.

14. Hemorrhage into centrum ovale and into cerebral peduncles.

15. Ferrier produced dilatation of opposite pupil by destructive lesion of the optic tract in the thalamus, indicative of rupture of the centripetal fibres to the irido-motor nucleus in the floor of the Sylvian aqueduct.

16. In hydrophobia there is mydriasis.

17. Mydriatics: atropine, homatropine, duboisine, daturine, hyoscyamine. Curare injected subcutaneously in animals (five to

ten centigrammes) induces in one or two hours complete paralysis of the third nerve.

The Effect on the Pupil of Local Conditions of the Eyeball.

1. Hyperæmia of the iris produces contraction of the pupil which darkness scarcely diminishes.

2. Presbyopia and hypermetropia cause contraction of the pupils in cases where continuous and excessive strain for near accommodation has been long continued and has produced asthenopia.

3. Pupillary atresia, consequent upon the chronic irritation with posterior synechia, producing contraction of the pupil.

4. In synechia total dilatation is impossible, the iris only dilating where free, hence, the pupil is irregular. If the synechia is annular the pupil is both contracted and immobile.

5. In micropia there is a congenital state of extreme contraction.

6. In glaucoma the pupil is dilated, contracting little or not at all to the action of calabar bean.

7. Coloboma, both in the congenital form and after iridectomy, there are irregularity and immobility of the pupil.

8. In idiopathic mydriasis there is little contraction to the action of light or to myotics.

9. In certain cases of amblyopia and amaurosis there is dilatation of the pupil.

10. In hippus pupillæ there are alternate contraction and dilatation often accompanied by nystagmus.

11. Inequality of the pupils exists in some who have different degrees of refraction in the two eyes, one being emmetropic and the other myopic.—*International Journal of Medical Sciences*, July 1887, p. 144.

77.—ON THE TREATMENT OF PURULENT OPHTHALMIA.

By CHARLES HIGGENS, F.R.C.S.. Ophthalmic Surgeon and Lecturer on Ophthalmology to Guy's Hospital, London.

Severe purulent ophthalmia is perhaps the most rapidly destructive disease to which the eye is subject; consequently its treatment has received a large amount of attention. It has always appeared to me that the disease could be rapidly cured if the discharge could be got rid of, or its character altered; it always seemed that it was the discharge which kept the disease going. Constantly washing away the discharge with some astringent and antiseptic lotion gave fairly good results; but the treatment was troublesome, and unless one saw to it oneself was rarely properly carried out. Some years ago Mr. Bader first suggested that persalts of mercury killed or destroyed the pus secreted by a mucous surface; he used to employ an ointment of red oxide of mercury, atropine, and vaseline applied to the conjunctiva, and with good

results. The one objection to this treatment was the severe pain it caused, which seemed to me to quite counterbalance any advantage it might have over the washing away treatment. Since cocaine has been introduced, application can be made to the eye of substances which before its introduction caused so much pain that few patients could be found who would continue to use them. I have now treated some ten or twelve cases of severe purulent ophthalmia—some of distinctly gonorrhœal origin—by the following method, and a case reported from notes by my dresser (Mr. Andrews) is a fair specimen. 1. Wash away all discharge, and thoroughly cleanse the eyes with a 5 per cent. solution of boracic acid. 2. Apply thoroughly to the whole conjunctival surface, and fill the conjunctival sac with, an ointment composed of yellow oxide of mercury (16 gr.), boracic acid (20 gr.), hydrochlorate of cocaine (from 5 gr. to 10 gr.), and vaseline (1 oz.); and in some cases I also add 2 gr. of sulphate of atropine. The ointment may be applied with a camel-hair brush, a quill, a syringe with a good wide canal, or in any way that seems most suitable, so long as care is taken that no part of the conjunctival surface escapes it. 3. Cover the eyes with lint plentifully smeared with the ointment, and bandage them. Some pain is caused by the first application, which can be prevented by using a 2 per cent. solution of cocaine before making it; after the first application the effect of the cocaine in the ointment keeps the eye numb from one application to the next, unless the applications are made at very long intervals. The eyes should be examined in about two hours. If there is any discharge the whole process must be repeated; if there is none, the bandage may be reapplied and left for another two hours. As a rule, the ointment requires to be applied every four hours for the first two days, less frequently afterwards; *but the discharge must never be allowed to collect.*—*Lancet*, July 2, 1887, p. 12.

78.—AN OPERATION FOR THE CURE OF ECTROPION.

By N. DAVIES-COLLEY, M.C.Cant., Surgeon to and Lecturer on Anatomy at Guy's Hospital, London.

I do not know whether the mode of procedure adopted in the treatment of the following case is new, but, as I can find no mention of it in our text-books, I venture to bring it before the profession, in the hope that it may prove serviceable where the ordinary operations for the relief of this unsightly deformity have failed.

My patient, Michael R——, was a delicate boy of three years of age, who was admitted under my care into Guy's Hospital on Oct. 25th, 1883, with necrosis of the superior maxilla following measles. The left lower eyelid was then much everted, and it became still more so after the removal of sequestra from the front and outer

walls of the antrum. In January, 1884, the eyelids were pared and stitched together, and an incision was at the same time made below the lower eyelid to free it. For ten months the child went about with the eye thus closed up, but at the end of that time, when, at the urgent request of the friends, the union between the edges of the lids was divided, immediately the eversion of the lower lid returned. In a short time he was found to have an ulcer of the cornea and considerable conjunctivitis, as the result of the exposure of the eyeball. In January, 1885, I again operated in the same way as before, but this time, in addition to the paring and uniting of the lids, I took a flap more than two inches long, as indicated in

FIG. 1.

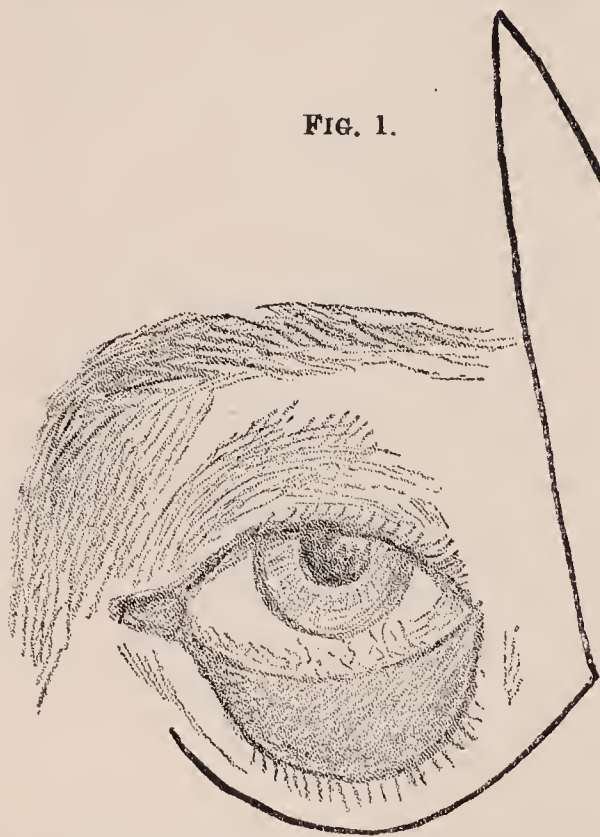
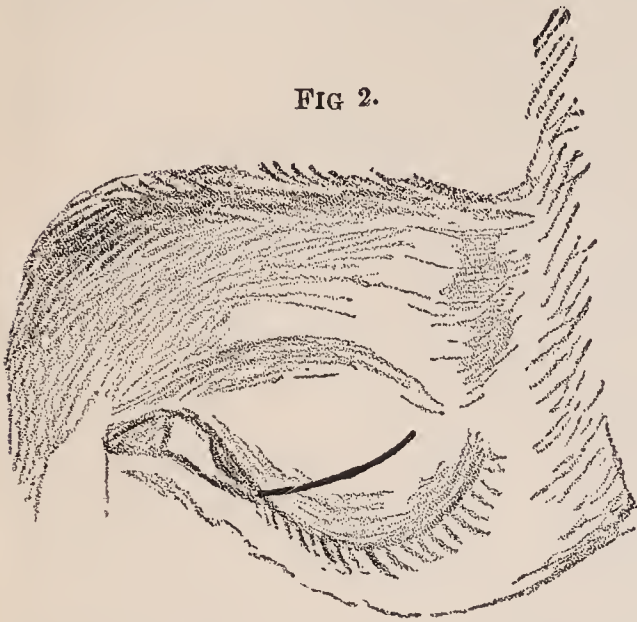


Fig. 1, from the temple, and stitched it carefully into the gaping wound produced by the incision necessary to free the lower eyelid. The eversion was so great that I had much difficulty in paring the edge of the lower lid, for it lay at the bottom of a groove which intervened between the prominent granulations of the palpebral conjunctiva and the skin of the cheek. I was disappointed to find, at the end of a few months, that the flap

which I had transplanted had not, as in many other cases in which I have operated similarly before, taken the place of the skin of the lower eyelid, but that although it had united perfectly, it had been drawn downwards by the contraction of the soft parts, so as to form the integument of the upper part of the cheek, while the upper eyelid had been elongated, so that its lower border was about on the level of the floor of the orbit. There was a small chink still patent between the inner thirds of the eyelids, through which the boy was able to see a little, but it was evident that if this chink were enlarged by the division of the artificial union between the lids, the eversion of the lower lid would return, and it was probable that in addition to the deformity the boy would also suffer as before from the exposure of the cornea and conjunctiva. The only way which I could devise for restoring the

use of the eye without producing these results was to divide the upper eyelid, and to convert that portion of it which had for some

FIG 2.



time occupied the position of the lower eyelid into a substitute for it. Accordingly, in May, 1886, sixteen months after the previous operation, I divided, under ether, all the structures of the upper eyelid with a pair of scissors, beginning my incision at the outer end of the chink between the edges of the inner thirds of the lids, and extending it, as indicated in Fig. 2, outwards and slightly upwards for from five-eighths to three-quarters of an inch. To

prevent the cut edges uniting again, I then attached the skin to the mucous membrane by fine catgut sutures. From that time until now the boy has been able to use the left eye as well as the right, and there has been no return of the eversion. At first there was some epiphora, but of late the tears only occasionally fall down the cheek. The angle which was formed by the junction of the normal and artificial edges of the new upper eyelid has rounded off, and now hardly attracts notice. He is able to open his eye well, but cannot close it completely, the gap between the lids being about an eighth of an inch wide. There is, however, no conjunctivitis or disease of the cornea from this slight exposure. There are two defects still apparent in his condition. As will be seen by reference to Fig. 3, which is a rough copy that I have made of a

FIG. 3.



very good portrait of him, taken by my late dresser, Mr. Theodore Fisher, some eyelashes emerge from the lower border of what is now his lower eyelid, and there is a small gap, about one-eighth of an inch broad, which must have remained ununited when the eyelids were stitched together two years ago. The great tension of the parts has produced a triangular aperture below the gap,

through which a patch of conjunctival granulations can be seen. When the boy has a cold, a few tears escape by the aperture.

and cause a slight epiphora. I hope on some future occasion to remove these slight defects by a further operation. If I had from the first intended to divide the upper eyelid, it would have been easy to produce a better result by paring away the eyelids so freely as to remove the eyelash bulbs before inserting the stitches. Moreover, I do not think that the preliminary transplantation of a flap is at all necessary to the operation.—*Lancet*, March 26, 1887, p. 619.

79.—ON GLAUCOMA AND ITS TREATMENT.

By CHARLES BELL TAYLOR, M.D., F.R.C.S.E., Surgeon to the Nottingham and Midland Eye Infirmary.

[After a short reference to the remoter causes of glaucoma, and to the changes in the eye probably producing it, Dr. Taylor says:]

Of primary glaucoma you will meet with two principal varieties—the simple and the inflammatory. The patient we have just left in the ophthalmoscope room, who is fifty-four years of age, and both of whose eyes are affected, is quite a typical example of the former condition. His wife tells us that he has destroyed his sight by using too strong magnifying glasses, and that his vision varies, being worst at night, worse at some times in the day than at others, and worse on some days than on others. He is a big-framed man, with a full hard pulse, and complains of attacks of dimness of vision, similar to what would be caused by clouds of smoke or fog, with a rainbow round luminous objects. He is subject to headache; the iris is sluggish, and the cornea insensitive. The general acuity of vision is distinctly lessened, amounting to slight short sight: but the peripheral portions of the retina have suffered most, specially, as we ascertained by lamplight (which is best for this purpose), to the inner or nasal side. On ophthalmoscopic examination we found that the optic disc is what is termed cupped, or rather excavated, for it is hollowed out at the sides with overhanging edges, and the pressure which has driven back the papilla has also detached the choroid, so that the disc is surrounded by a whitish ring of exposed sclera. We have ascertained that this is a true excavation and no optical delusion by the parallax, with both the direct and indirect methods of examination, and we have also calculated its depth by reducing to millimetres the different values of the lens required to see the base of the cup and the surface of the retina. “But,” you may say, “granting that there is a cup, how do I know that it is a glaucomatous, and not a physiological or congenital cup, or the result of atrophy from absorption of nerve tissue consecutive to cerebral change?” Well, I know that it is a glaucomatous and not a physiological cup, because the physiological cup affects both eyes alike, and in this case the right eye is much the worst of the two. This cup, moreover occupies the entire area of the papilla, and, most characteristic

feature, the vessels are crowded to the nasal side; whereas the physiological cup, however steep it may be, never involves the whole of the disc, and there is no like tucking under, lateral displacement, or changed calibre of retinal vessels. I know this is not a case of simple atrophy, absorption of nerve tissue, or amblyopia from cerebral change, because, apart from other important symptoms, the destruction of the field of vision in cases of atrophy begins on the temporal, and not—as in glaucoma cases—on the nasal side. I know also this is the result of increased tension, because, although there is no spontaneous pulsation of retinal vessels, throbbing is easily induced, as you saw, by the slightest touch on the surface of the eyeball, the artery beating in the centre of the disc and the veins collapsing in concert at its periphery. For the rest, strange to say, the eye looks fairly natural; is not inflamed or congested; nor are the episcleral veins notably enlarged; nor is tension, just now at any rate, very greatly increased. Let us consider what is the cause of these curious symptoms; and first, as to his wife's suspicions. There is no reason to believe that he has been using too strong glasses, for the fact is, the man's accommodation is paralysed from pressure on the ciliary nerves, and strong glasses are a necessity, if he is to see small objects at all. Indeed, you may always suspect glaucoma when a patient is constantly changing his glasses. His vision is worst at night, and varies from day to day, because of slight exacerbations, and because the eye sympathises with fatigue and the general constitutional condition; the clouds of smoke and rainbows are caused by œdema of the corneal epithelium from infiltration with intraocular fluids (Fuchs); the cornea is anæsthetic from pressure on the ciliary nerves as they pass along the inner surface of the sclerotic, and the whole visual acuity is diminished from this cause, as well as from retarded blood supply, the inner or nasal side suffering most, because the vessels supplying the corresponding outer half of the retina have the longest course to run, and are consequently most exposed to pressure. The optic disc is hollowed out because it is the weakest part of the sclerotic, and is therefore the first to give way; the artery pulsates because the intraocular pressure is so great that the blood can only pass at the moment of the heart's contraction; and the fact that all this takes place without any marked hardening of the globe is a proof, either that slight tension long continued will cause grave intraocular changes, or that in this case it has been effected during exacerbations, which are such a distinct feature in almost all forms of glaucoma.

Inflammatory glaucoma, of which you have seen many examples, may prove so intense as to destroy sight in twenty-four hours—hence called *fulminans*. It may resist all treatment, including iridectomy; in fact, get worse whatever you may do—hence called *malignant*; and short of these aggravated conditions, which for-

unately are rare, it may occur in a chronic or acute form. The female patient with the green eye, *γλαυκον ομμα*, *glaucon omma*, to whose case I directed your attention at the commencement of this lecture, is a good example of acute glaucoma. She is fifty-six years of age, has recently lost her husband, and had troubles of various kinds. Six weeks ago she went to bed as well as usual, but was roused in the middle of the night by a violent pain in the right eye, which was swollen, inflamed, and watering freely. She was treated by a local practitioner, but the disease progressed steadily from bad to worse, until at last all perception of light was gone. At present you see that the iris has lost its tint and lustre; that the cornea is dull and anæsthetic, that the eye is as hard as a stone, and that the widely dilated pupil presents a peculiar tint, compounded of a yellow lens and turbid blue aqueous humour. In these cases the disc is not usually cupped, simply because the pressure has not lasted long enough to induce that change. If, however, the fundus can be illuminated, you will see the artery throbbing without any superadded pressure; or, if nothing else is to be seen, the optic disc looming through the turbid vitreous like the sun in a fog. As the disease advances, the iris loses its colour; the pupil dilates, assumes an ovoid form, and is insensible to light; the vitreous and aqueous humour become more or less opaque, and the former has usually so pushed forward the lens and iris base that the anterior chamber is well-nigh obliterated. The patient's sufferings in some cases are little short of agony; in others, fever runs high and vomiting is frequent. With many pain is referred to other parts, so that the eye, as the *fons et origo mali*, is apt to be overlooked, and the attendant misled as to the nature of the case. I was once called to a patient whom I found on her hands and knees, groaning, with her face buried in the pillow. The case had been diagnosed as severe migraine, and six teeth extracted in the hope of relief. Another had had her head shaved and been bled and blistered, on the ground that she was suffering from meningitis; and a third was reported as affected with gastric fever. Iridectomy acted like magic so far as the relief of pain was concerned in each of these cases, but was too late to restore sight in the first two, and was only partially successful in the third. Chronic, inflammatory, and irritable glaucoma present the same symptoms as the acute, but to a less degree; and these forms of the disease, like simple glaucoma, are also characterised by marked exacerbations and remissions.

With regard to treatment. The indications in secondary, consecutive, and traumatic glaucoma are clear enough. We must, whenever possible, remove the cause of disaster. A broken-up lens that blocks the angle of the chamber or presses upon the iris must be let out; the dislocated lens must be extracted, and tension after capsular operations treated by paracentesis. Adhesions with

ulceration require iridectomy; and the same operation must be performed whenever glaucoma complicates iritis, irido-choroiditis, and excluded pupil. As to cases of simple and inflammatory glaucoma, it has been very generally taught that all the resources of the Pharmacopœia are powerless to cope with these maladies—an assertion hardly, however, in accordance with facts; for just as a sudden fright, probably by dilating the pupil, may cause or precipitate an attack of glaucoma, so will eserine, by inducing an opposite condition, avert it. Just as anxiety and prolonged vigils may cause increased tension, so will morphia or other hypnotic, if it ensure profound sleep, abort it. Just as a rise in blood pressure from excitement and derangement of the sympathetic and fifth nerve may provoke excessive secretion, so will medication, such as blood-letting, ice, or hot fomentations, elaterine, eserine, pilocarpine, and large doses of quinine (10 grains, Mittendorf), tend to stave off an attack or mitigate its severity. I do not say that such remedies will avail in a severe case, cure or prevent recurrence in slighter ones, or avert gradual deterioration of sight in any; but there is no doubt that the disease may be kept at bay for a time by judicious medication, and it would be unwise to ignore the value of such remedies when from any cause operation is postponed.—*Lancet*, Sept. 10, 1887, p. 506.

80.—TREATMENT OF GUN-SHOT WOUNDS OF THE EYE.

By CHRISTOPHER S. JEAFFRESON, Senior Surgeon to Northumberland, Durham, and Newcastle Eye Infirmary.

In cases where there has been no penetration and the injury consists of ecchymosis of the conjunctiva with extravasation to a greater or less extent into the anterior or posterior chamber, we must use cold and evaporating lotions and do our utmost to guard against all inflammatory reaction. We shall usually succeed in this with young and healthy persons and in persons of more advanced years if there is an absence of gouty, rheumatic, or other diathesis predisposing to inflammation. In course of time the blood effused will be absorbed, and if the media regain their transparency and there has been no detachment of the retina, sight may eventually be restored to a useful degree. Are there any external or internal remedies which promote the absorption of extravasated blood? I must confess personally I have not much faith in any, but I usually order locally a weak lotion of lead and opium or belladonna, or, in cases where inflammation threatens, conium; and internally administer small doses of iodide of potass with tincture of jaborandi. I have more faith in this drug than any other, and certainly think its administration either internally or by means of subcutaneous injections in the shape of pilocarpine promotes absorption.

In cases where a shot corn has penetrated the globe the case at once assumes a more serious aspect and requires more radical measures. I must here only mention to condemn any attempts being made by probes or otherwise to search for the position of the shot or ascertain its presence. I have seen such attempts practised, but they can lead to no good, and may be productive of much harm by increasing the risk of panophthalmitis and suppurative inflammation. There is only one condition, or rather combination of circumstances, under which I should consider such attempts justifiable (and then only when we had reason to suppose the shot was close to the wound): that is, when the patient has already from some other cause lost the sight of the uninjured eye, or it suffers from such an amount of amblyopia as to render it practically useless. Under these circumstances we can be influenced by no fear of sympathetic mischief being developed, and every attempt should be made, and at all risk, to preserve the damaged organ if it retains nothing more than a mere perception of light. This rule applies, I need scarcely say, with equal force to accidents occurring from other mechanical causes than gunshot wounds. I have known enucleation recommended, and in more than one instance performed, before it was ascertained that the remaining eye was a useless organ, and I cannot too strongly impress upon you the necessity of making strict inquiry before you recommend such a proceeding. I have only once succeeded in extracting a shot from a wounded eye. On that occasion there was evidence of penetration about three inches outside the lowest part of the sclero-corneal junction, and a large piece of iris was protruding. The anterior chamber was full of blood, and there was no perception of light. The sight of the other eye was perfect. I recommended that the damaged organ should be enucleated; but the patient refused, and I therefore excised the protruding piece of iris. When I had cut it close off, a small black spot seemed still to present at the wound. Touching it with the iris forceps, I found it to be a shot. I slightly enlarged the wound, and it fell out. The patient recovered, but with no useful vision.

The enlargement of the wound will in all cases become necessary when a shot has to be extracted, as the elasticity of the cornea and sclerotic is such that the wound is always smaller than the body which produces it. In most cases, then, when a shot has penetrated the globe and is supposed to be lodged there, the only legitimate treatment is enucleation or some one of its more modern modifications. Let us for a moment examine what will be the result if no such plan is pursued. In a few cases but little reaction takes place; the blood effused becomes absorbed; and if the lens is not wounded and the iris has escaped injury, things may remain in a quiet condition, and the shot eventually become encysted. In these cases, for a time the patient is satisfied with

his condition, and is apt to consider that the advice tendered in favour of enucleation was unnecessary and harsh. But the dangerous epoch for such an eye is sure to come sooner or later. The encysting capsule becomes partially absorbed, under some violent exertion or shock to the head or body the shot shifts its position, and severe symptoms immediately set in. I have noticed that the train of events above described is peculiarly liable to occur when the patient is least able to bear it—that is, at a time when some intercurrent disease has reduced his physical powers, especially maladies which have a tendency to produce emaciation. In other cases the original hopeful condition is only maintained for a short time, retrogressive changes set in, and the whole globe undergoes a process of phthisical wasting. In others, again, a subacute inflammatory condition is developed, with choroido-iritis or perhaps ossification of the choroid, and the patient is eventually glad to submit to the treatment which the surgeon proposed to him from the first. In by far the majority of cases, however, if nothing is done, violent reaction takes place at once. Acute inflammation is set up with great pain, and considerable constitutional disturbance and a condition of panophthalmitis, or suppurated choroiditis, is established, which in weakly and broken-down subjects may give rise to grave anxiety.

In the event of a patient acquiescing to part with his eye, what operation should we perform? Should we enucleate the whole globe, or should we content ourselves with the ablation of the anterior segment and clearing out the sclerotic cavity, an operation which now goes by the euphemistic term of “exenteration”? To enter upon this question here would be to open up ground which has lately been much controverted. Personally I believe the disadvantages of enucleation have been very much exaggerated, and the advantages of exenteration unduly extolled. Its relative value as a preventive, or rather I should say safeguard, against sympathetic ophthalmia, as compared with enucleation, has yet to be determined. It is more painful, is not less tedious in its performance than enucleation, and is followed at times by an amount of reaction which, in my experience, is very rare in enucleation. I have not been overtaken by the fear of septic poisoning following enucleation, which seems to have invaded continental ophthalmic clinics and threatens some of our own. It must have fallen to my lot within the last sixteen years to have enucleated as many eyes as most persons; yet I have never lost a patient or seen one lost by enucleation. I have seen cases in which slight symptoms of septic poisoning were developed, but these occurred almost invariably when enucleation was performed at the height of acute suppurative inflammation—a practice which I always personally condemn. The danger of this proceeding has, however, long been recognised; and it is in these cases that, perhaps, the operation

known as "exenteration" may find a useful sphere for its execution; although I am still doubtful if it has any advantages over a free corneal incision with evacuation of the contents of the globe. All the different operations which have for their object the removal of an eye are as much an "opprobrium" to the ophthalmic surgeon as an amputation is to the general surgeon.—*Lancet*, May 21, 1887, p. 1020.

81.—ON SOME OF THE USES OF COCAINE IN OCULAR THERAPEUTICS.

By R. BRUDENELL CARTER, F.R.C.S., Ophthalmic Surgeon to St. George's Hospital, London.

The most important recent addition to the medicinal resources of ophthalmology has now been for nearly three years before the profession; and the time has probably arrived at which a brief general account of its most conspicuous uses may be attempted.

One word about nomenclature. I have observed that some writers, with an affectation of purism which is probably founded upon error, compel themselves to employ the spelling "cuca," and "cucaine," because, as I have had the matter explained to me, the vowel "u" is thought most nearly to represent the sound of the name as it is pronounced by the Peruvian mountaineers. Endeavours to express the sounds of savage languages in Roman characters have seldom been remarkably successful; and, in this particular case, we have a standard of spelling from which it is clearly wrong to depart. The plant from which the alkaloid is obtained was described by Lamarck as "Erythroxylon Coca," and the last edition of the British Pharmacopœia contains the preparations "Cocainæ Hydrochloras," and "Lamellæ Cocainæ." A prescriber who orders *Lamellæ Cucainæ* releases the dispenser from the authority of the Pharmacopœia, and leaves him at liberty to supply any agent which may seem good to him.

The *lamellæ cocainæ* of the Pharmacopœia are directed to weigh about 1-50th of a grain, and to contain 1-200th of a grain of cocaine hydrochlorate. For my own use, I much prefer wafers which contain 1-50th of a grain, and I find these in two very different forms. In one form the wafer is opaque, or at least dull, in the other it is clear; and the clear wafers are somewhat thinner and of slightly larger diameter than the dull ones. The former are very hygrometric, and, in damp weather, are liable to become agglutinated into a mass in the bottle containing them; while the latter always remain separate, but, in very dry weather, become brittle, and may break into pieces even by being shaken in the pocket. It will be manifest that each form has its advantages in different atmospheric conditions; but the dull wafers are perhaps the most generally applicable.

As a member of the Pharmacopœia Committee of the General Medical Council, I have requested Dr. Attfield to consider the practicability of obtaining a wafer of intermediate hygrometric qualities, which may be available in all seasons, and also of combining some antiseptic agent with the gelatine. This, especially when it attracts moisture, is certainly liable to become a nidus of bacterial life, and therefore, as mentioned in my last paper, I am careful to wash away all residual gelatine from the surface of a cocaineised eye, before attempting to perform any surgical operation upon it.

A solution of cocaine hydrochlorate in distilled water speedily becomes discoloured and turbid, and the subconjunctival injection of such a solution, as a preliminary to operating for squint, was followed, on the only occasion on which I employed it, by acute suppuration in the orbital connective tissue. I have ever since used a saturated aqueous solution of salicylic acid as the solvent, and the resulting liquid keeps bright and clear, and has given me no trouble. Distilled water takes up about 1-760th part of its weight of salicylic acid, and in this solution 10 per cent. of cocaine hydrochlorate may be dissolved with facility. I have no experience of the weaker solutions which are employed by some surgeons.

For operations upon the eye itself, or as a preliminary to applications which would otherwise be painful, I much prefer the cocaine wafers to the solution, the absorption of the drug, in my experience, being more certain and complete when it is applied by means of the former. I use the solution only for the purpose of reaching deeper parts, and then by means of the hypodermic syringe. Thus, in operating for squint, I first insert a wafer, placing it on the conjunctiva over the attachment of the muscle to be divided, and then, after ten minutes, inject about three minims of the 10 per cent. salicylic solution, directing the needle in such a way as to distribute the dose over the track of the scissors. In three minutes more the operation may be performed, and the patient will usually feel no pain, but will describe a sensation of having the eye "pressed upon" at the time when the muscle is rendered tense by the strabismus hook.

In operating upon the eyelids for inversion, or for redundancy of skin, the wafer would be useless, and the hypodermic injection is all that is required. But it is expedient to mark the outlines of the intended incisions, with ink or some other colouring matter, before making the injection, as the swelling which this occasions will disturb the previous relations of the parts, and will render it difficult to estimate correctly the amount of skin which should be taken away. I find five minutes a sufficient time to wait between the injection and the operation.

However cocaine is applied to the surface of the eye, its immediate effects are temporary anæsthesia, temporary mydriasis,

and very considerable diminution of the calibre of the superficial blood vessels. The anæsthesia abolishes reflex muscular action, and also abolishes the excessive lacrymal secretion which is produced by a local irritant when sensation is unimpaired. It follows that an application, which would otherwise be painful, can be precisely limited to any affected region of the eye, and will neither be diluted nor washed to other parts of the organ by a flow of tears. These conditions are extremely valuable in the treatment of some of the varieties of corneal ulcer, and also in the treatment of many affections of the linings of the lids.

There are certain obstinate forms of corneal ulcer, usually situated near the margin, and often receiving a considerable leash of vessels from the conjunctiva, which show scarcely any disposition to heal. They are met with in very different constitutional conditions, and their character seems to depend upon some peculiarity in the actual ulcerated surface, a peculiarity possibly due to the presence of a microbe, possibly to other causes. In all of them, the destruction of the surface seems to be the first condition of improvement; and this destruction may be effected by caustic, by scraping, or by the actual cautery. It is probably not very important which of these methods is pursued, but the application of caustic, in the form of a point of nitrate of silver, will usually most commend itself to a practitioner who is not in the habit of performing operations upon the eye. After cocaine has been effectually applied, for which purpose a single wafer will usually be sufficient, a fine point of nitrate of silver may be used to touch the ulcerated surface, and may be strictly limited to it; and, if the application be followed by complete closure of the lids under an antiseptic dressing, when this is removed in two or three days it will often be found that healing has made considerable progress. I am accustomed to supplement the destruction of the surface by division of the leash of vessels, sometimes using for this purpose the actual (galvanic) cautery, sometimes pinching up a fold of conjunctiva and dividing it with scissors close to the corneal margin, and completing the section by burrowing a little way under the conjunctiva, and separating it from the sclera over a certain area. When the healing process is once fairly set on foot, it will usually continue under the influence of such applications as the yellow oxide of mercury ointment.

The conditions of the lid-linings in which cocaine is chiefly useful are the milder forms of follicular granulations, and the states of general congestion which are so often produced by working under unfavourable conditions, as without spectacles when spectacles are needed. In cases of the latter class, it is obviously necessary that the unfavourable conditions should be replaced by better ones before amendment, or at all events cure, can be reasonably expected; but in the management of the local treatment cocaine

is of great advantage, and chiefly on the grounds already assigned, that it permits absolute localisation of the action of a remedy. In all the congestive and irritable states which attend upon uncorrected errors of refraction, I am accustomed to prescribe a solution containing either one or two grains of cocaine hydrochlorate, and four grains of boric acid, to the ounce of distilled water, a drop to be placed within the lower lid twice a day. In cases of a more severe kind, I apply a cocaine wafer, and then, when anæsthesia has been produced, paint the congested or granular lid surface with a solution of nitrate of silver, of from five to ten grains to the ounce, according to the severity of the case. The brush used for this purpose should be so scantily moistened that none of the solution will reach any part to which the brush itself is not actually applied; and the lid may be held away from the eyeball until the action of the nitrate is exhausted upon the conjunctiva, so that the cornea shall not be influenced by it in any way. An application of this kind may usually be made about once or twice a week, the drops above mentioned being continued during the intervening days. When there are numerous follicular granulations (sago grains) on the retro-tarsal fold of the conjunctiva of the lower lid, these granulations may be individually crushed between the blades of cilia forceps without injury to the conjunctiva, as soon as the cocaine has taken effect, and before the nitrate of silver is applied. By this proceeding the time required for their absorption will be much abbreviated.

In iritis, cocaine is a valuable adjuvant, but must not be relied upon as a substitute for atropine, with which it may, however, be advantageously combined. It increases the comfort of the patient, diminishes surface congestion, and facilitates paracentesis in cases in which there is increase of tension. When there is severe pain, the pain of nervous irritability, cocaine will not replace the subcutaneous injection of morphia.

The action of the drug in diminishing the calibre of the blood-vessels is almost sufficient to indicate a large class of cases in which it should not be employed. In destructive corneal ulceration, especially in old and feeble people, when the chief object of the surgeon is to promote the local circulation, the action of cocaine would be antagonistic to repair, and the same considerations would apply to certain cases of injury, attended by little vascular reaction, and in which prompt healing would be in an important degree conducive to safety. A reviewer, using the initials E. J., has recorded, in the last number of the *International Journal of the Medical Sciences*, a case in which severe ulceration of the cornea followed the frequent and persistent use of cocaine solution for the relief of a painful conjunctivitis. I have not myself witnessed any analogous result; and indeed the only mischief which I have seen follow the use of cocaine, if mischief it could be called, was the

complete peeling off of the corneal epithelium of a cocaineised eye during the operation of cataract extraction. When the eye was opened for the first dressing, the epithelium was found to be renewed, and no bad consequences resulted from its temporary absence. Like all mydriatics, cocaine is absolutely contraindicated in all forms of glaucoma, except when used as an immediate preparation for iridectomy; and, inasmuch as many forms of glaucoma are painful, the necessity for caution in this regard can hardly be too strongly impressed upon practitioners. But as a surgical anæsthetic, as an aid in the removal of foreign bodies from the cornea, especially in children, and as an adjuvant to the treatment of many forms of painful superficial disease, especially when attended by local congestion, its benefits can perhaps hardly be over-rated, and certainly cannot be adequately estimated without frequent experience of them.—*Medical Press and Circular*, July 13, 1887, p. 25.

82.—ON A CASE OF CEREBRAL ABSCESS DUE TO OTITIS MEDIA, SUCCESSFULLY TREATED BY TREPHINING.

By WILLIAM MACEWEN, Surgeon to the Royal Infirmary, Glasgow.

[Mr. Macewen publishes the following graphic narrative of a case under the care of Dr. Barr, in the Glasgow Hospital for Diseases of the Ear. Dr. Barr had perforated the mastoid process some days before the patient was seen by Mr. Macewen.]

On the thirtieth day of his illness Dr. Barr asked me to see a case in which he suspected cerebral abscess. The boy's state was then as follows: On approaching his bed one perceived a heavy foetid odour, traceable to the discharge from the right ear. One saw an extremely emaciated child, with a pale, greyish face, wrinkled skin, prominent cheek bones, and somewhat sunken eyeballs. He lay upon his right side in bed, his hand beneath his head, looking as if he were asleep with his eyelids half open. His lips were livid, and on the upper one herpetic remains appeared. His tongue was red and dry. Sordes covered the teeth. When an attempt was made to rouse him the right upper eyelid drooped, and there was a shade of passivity of the right side of the face, with a slight dragging of the angle of the mouth toward the left. The conjunctiva of the right eyelid was congested, and the lids were smeared with pus. The pupils were equal, about medium size, and responded sluggishly to the action of light. The veins over the right side of the head were congested, and stood prominently out on his shaven head. Pain on percussion was elicited over the right temporal, while percussion over the head generally was calmly borne. There was no cedema about the mastoid process. The right sterno-mastoid muscle was rigid. There was no hard, cord-like feeling along the line of the internal jugular, though

the external jugular was prominent. Acute pain was elicited on digital pressure just behind the origin of the sterno-mastoid, in the tissues near the exit of the vein which passes through the posterior condylar foramen. He was in a state of stupor, from which he could only be partially aroused, and not to such an extent as to give an intelligent answer to any question. His pulse was markedly slow, 50 to 60 per minute, and was feeble and intermittent. His limbs were extremely attenuated, and there was an irregular muscular tremor over the body generally, such as one frequently finds in approaching dissolution. He had a frequent cough, with purulent expectoration, which had an offensive odour, and there were moist râles over both sides of the chest. His bowels were and had been obstinately constipated. His urine was free from albumen. It was somewhat difficult to believe that some weeks previously this boy was apparently stout and robust, and was vigorously engaged at playing football. There was a flow of excessively foetid fluid from the external ear, and as this was greater in amount than what would be likely to come from the antrum or middle ear, it was suspected that there might be a connection between the middle ear and the intra-cranial cavity. There was no difficulty in concluding that this patient suffered from cerebral abscess, originating in septic otitis media. It was almost positive that it was situated in the temporo-sphenoidal lobe, and it probably had a tortuous and minute communication with the middle ear. It was feared that the lung affection was secondary to the septic absorption. The prognosis was almost hopeless, his youth being the one favourable point. Immediate operation was advised, and with Dr. Barr's concurrence it was at once carried out.

Operation.—The middle ear was washed out with an antiseptic solution, and rendered as nearly aseptic as possible. The scalp and parts around the ear were carefully washed with soap and water, then they were cleansed with turpentine, and finally with methylated spirit. An anæsthetic was administered. A half-inch disc of bone was removed from the squamous portion of the temporal, at a point an inch above and half an inch behind the centre of the external auditory meatus. The bone was normal; the dura mater was here slightly congested, and did not impart any brain impulse to the finger, neither was any discernible when the aperture in the skull was filled with fluid. When the membrane was opened and turned aside, the brain tissue immediately bulged into the osseous cavity and rose above its external level. The pia mater covering it was congested, and the brain substance had a yellowish-red appearance. A hollow needle was inserted into the brain in a direction which, if introduced far enough, would strike the eminence in the petrous bone above the middle ear. After it had penetrated the brain tissue for about three-quarters of an inch, there was a sudden escape of foul gas, accompanied by a bubbling sound

and the escape of a few bells of fluid. Evidently the upper part of an abscess cavity had been tapped, and this contained foetid gas. The needle was inserted a little further, when pus flowed out. It was of an ordinary yellowish colour, and had a most offensive odour. After two drachms had slowly welled away, the aperture in the brain tissue was enlarged by forceps, and portions of the brain tissue, which had become necrosed, were removed. The latter consisted of shreds, two about the size of a large horse-bean, the others that of barley grains. On their removal more pus welled away. The cavity was then washed out with a saturated solution of boracic acid. After that, however, there was still a slow oozing of pus, along with the extrusion of minute shreds of brain tissue. It was evident that there was a considerable zone of purulent inflammation surrounding the abscess cavity, from which the pus continued to ooze. An aperture was then drilled into the base of the skull, just above the osseous boundary of the external auditory meatus, involving the squamo-petrosal suture. The dura mater was examined here and found intact. It was penetrated, and the abscess cavity was reached. A stream of boracic lotion was passed from this aperture so as to wash out the cavity of the abscess, and it was continued until it passed freely out by the upper opening. The current was then reversed. Even after that, when the drainage-tube was inserted, an oozing of purulent fluid took place into the tube. The ear was again cleansed. Chromicised chicken-bone drainage-tubes were introduced into both apertures. The parts were thickly dusted over with boracic acid powder, and dressed with sublimated wood-wool pads.

When placed in bed the patient was extremely weak, but rallied after the first few hours. A marked improvement was observable during the first week. The pulse became quicker and the temperature a little higher, both good signs. The face became brighter, the eyes clearer, the eyelids free from pus, the ptosis vanished, and the mental condition improved. After the first week, though kept on restricted diet, he improved in flesh, and continued subsequently to do so at a rapid rate. The wounds were dressed about once a week, when the parts were thoroughly syringed with saturated boracic solution, the drainage-tubes being gradually curtailed as the granulation tissue blocked them out. The softened brain tissue at the seat of the upper opening in the skull soon presented a mass of granulations, which increased in size, and rose into the aperture in the bone, uniting with the layer which formed on the exterior of the skull. Soon the two became blended together, and cicatrisation rapidly progressed. The chromicised chicken-bones answered admirably as drains, notwithstanding the action of the tissues, until they were removed, the upper one after fully five weeks. They also presented the advantage over silver ones, of being easily shortened when required.

The child put on flesh rapidly, and at the end of six weeks was quite plump.

Dr. Reid examined the eyes about the end of the fourth week after the operation, and could find no trace of optic neuritis. He was of opinion that optic neuritis could not have been present at the time of the operation, without having left some traces of its presence four weeks after.

On March 17th, Dr. Barr examined the affected ear. There was still slight purulent secretion coming from the granulation tissue in the middle ear. The hearing power was as follows: A watch heard forty inches from the ear in normal hearing was audible at a distance of five inches and a half. By bone conduction hearing was very good. A tuning-fork (C) applied to the middle line of the head was heard louder in the affected ear. Pressed in the mastoid process, the tuning-fork was heard much louder than when held near to, but not touching, the orifice of the ear. The results of these tests with the tuning-fork point to a normal state of the labyrinthine and nerve structures.—*Lancet*, March 26, 1887, p. 616.

83.—ON TINNITUS AURIUM, AND SOME OF THE SPECIAL REMEDIES FOR ITS RELIEF.

By THOMAS BARR, M.D., Glasgow.

[The following is an abstract of an introduction to a discussion at the Dublin meeting of the British Medical Association, 1887.]

It is not my intention to place before you anything like a review of the etiology, pathology and treatment of this symptom, as such a course would lead us over far too wide a field of discussion. I cannot better occupy the time at my disposal than by considering shortly, and inviting the expression of your views upon a few of the special remedies which are recommended or employed for the relief of this symptom. I exclude from consideration those remedial measures, whether operative or medicinal, which are directed to the removal of definite, well-recognised lesions in the external or middle ear, upon the existence of which the tinnitus may depend, and by the cure of which the tinnitus is fortunately often removed. Excluding the consideration of these or other forms of treatment intended to remove any palpable lesion or any evident pathological source in the naso-pharynx or ear, we shall inquire what other weapons do we possess, in addition to such modes of treatment, which may be efficiently employed for combating this symptom. We cannot, I think, do better than confer with each other as to the relative and actual value of the various means which have been proposed and tried in such intractable forms of tinnitus aurium.

The first of these to which I would beg to direct your attention is *electrical* treatment. Great diversity of opinion seems to prevail

as to the value of this mode of treatment in tinnitus. I think that in the use of electricity to the ear the mode of applying the electrodes is of great importance. The plan of placing one electrode over the mastoid process or to the orifice of the ear, and the other in the hand of the opposite side, is not, I think, a good one. As thus applied, I believe it to be less efficient and also more apt to excite giddiness or flashes of light. Any good results I have seen have been achieved by applying one electrode, in the form of a piece of sponge attached to the conducting wire and placed at the end of a vulcanite speculum, deep into the external auditory canal, even to the outer surface of the tympanic membrane; and the other, by means of a metallic ring at the end of a catheter, to the pharyngeal orifice of the Eustachian tube. In this way the galvanic current is passed, as completely as possible, through the middle ear. My impression is that any benefit derived is obtained more from the action of the electricity upon the middle ear than from its effects upon the internal ear, and that the benefit is mainly connected with its action upon the intrinsic muscles of the middle ear. We know the far-reaching influences of disturbance of the muscular apparatus of the Eustachian tube and tympanum upon the whole organ of hearing—first, upon the tension of the tympanic structures, and, secondly, upon the tension of the labyrinthine fluid, and the more efficiently we act upon these tubal and tympanic muscles the more likely are we to have good results. It is very much to be desired that this method of treatment should be placed upon a firmer and clearer basis than heretofore, and it is possible that the more general use of a galvanometer and rheostat may assist in the attainment of this result.

Another method of treatment to which I would ask your attention is the *Tonbehandlung*, tone treatment, brought recently before the profession by Prof. Lucae, of Berlin. Itard and Urbantschitsch had already pointed out the effects of objective sounds outside the body upon subjective sounds in the ear. Lucae has found that a striking influence is frequently exerted upon certain subjective sounds in the ear, mainly of a musical character, by bringing to bear upon them objective sounds coming from a tuning fork, if these objective sounds be as far removed as possible in pitch from the subjective ones. For example, if the sounds in the ear are high-pitched notes, such as hissing, ringing, whistling, a deep-toned tuning fork such as C or C¹ is employed; on the other hand, if the sound be low pitched, such as rushing, buzzing, humming, or a low-toned bell, then a tuning fork of a high pitch, such as C₃ or C⁴ is used. The vibrating fork is applied either by placing the end of its handle into the external meatus, or, in order to augment the sound, the vibrations are passed through a resonator fixed into the orifice of the ear. The duration of the application may extend from one minute to five minutes, and in order to

ensure a continuous sound the tuning fork may be connected with a magneto-electric apparatus. I think Lucae's observations are of great value, not only in relation to tinnitus aurium, but also, to deafness itself. We know that patients frequently assert that the noises in the ear aggravate the deafness, and that if we could banish the sounds the hearing would be improved. Since Lucae's observations were published I have tried this tone treatment, and I have met with a considerable measure of success, and am of opinion that greater success is in store for this method of treatment. And, as confirming the impressions of patients in regard to the effects upon the hearing, I have found that the hearing power has been distinctly improved, both as tested by watch and speech, during the disappearance or subsidence of the sounds.

Probably of all medicines used for the relief of tinnitus, *hydrobromic acid* has been most extolled. I must confess, however, that my success has not confirmed the panegyrics of some writers. I have prescribed it very frequently indeed, and the somewhat meagre results have been disappointing. Our Chairman, whose writings on the pathology and treatment of tinnitus have been so suggestive and interesting, is of opinion that this medicine acts beneficially by bringing about contraction of the dilated and engorged vessels of the labyrinth, through its effects upon the vasomotor system of the labyrinth. I am afraid, however, that in the forms of tinnitus I am now describing we have generally to do not so much with dilated and engorged vessels but with the more serious condition of pressure exercised upon the nerve or labyrinthine fluid by condensed, thickened, rigid, or morbid tissue. Whether hydrobromic acid has the power of contracting dilated vessels in the labyrinth is not easy to prove. I can only say that in my experience it has only in a very few cases had the effect of removing or materially mitigating noises in the ear. This experience agrees with that of Politzer, expressed in his Text-book of Diseases of the Ear.

The *bromides*, especially bromide of potassium, have been, in my practice, more serviceable than hydrobromic acid. In doses of from half a drachm to a drachm at bedtime, bromide of potassium has not infrequently a distinctly mitigating influence upon the noises.

Pilocarpine, employed hypodermically, is undoubtedly useful in a certain proportion of cases. In my hands this remedy has been strikingly successful in several cases, although, alas! like other remedies for the relief of tinnitus aurium, it often fails. I believe it is only useful in recent and minute hemorrhages into the cavities of the labyrinth, but fails if the hemorrhage is extensive, because in this case, as might be expected, the delicate structures of the labyrinth are destroyed beyond the power of recovery, even after the effused blood has become absorbed. As to the explanation of

the therapeutic action of pilocarpine, we can only assume that it has an especial power of stimulating the absorbents in contact with the effused products, before these have become organised, and that this resorbent effect has also some connection with its remarkable powers of exciting the cutaneous and salivary secretion. It seems to have an especial action upon the intracranial absorbents, and we know that the vascular and lymphatic supply of the labyrinth is in reality the same as that of the interior of the cranium.

We are all familiar with the fact that *quinine* has an influence upon the circulation of the ear, especially of the internal ear, and that noises in the ear with impairment of hearing are frequently set up by this drug. There can be no doubt, however, that in the cases I am referring to large doses of quinine (5 to 20 grains) not infrequently exercise a beneficial effect. How this is brought about it is not easy to say; further and careful clinical observations are required before a decision can be arrived at in regard to the exact position of quinine as a remedy in these forms of tinnitus aurium.

I do not think that it would be profitable or interesting if I were to discuss the merits of all the multifarious medicinal remedies proposed and used for the relief of noises in the ear. Unfortunately, the weapons taken from this well-stocked therapeutic armoury are too often feeble and inefficient.

On the merits of nitrite of amyl, strychnine, arsenic, digitalis, nitro-glycerine, ergotine, convallaria, chloride of ammonium, &c., we need not descant. I trust that out of the wealth of your experience we may to-day add to our knowledge of the true position of some of these remedies. Neither need I point out the necessity of employing appropriate hygienic and dietetic treatment, if any departure from the healthy condition is manifest; nor of the importance of mercurials, laxatives, and salines, if the hepatic or stomachic functions are disturbed; nor of the value of ferruginous tonics in anæmia, and antisyphilitic remedies where a specific origin is clearly traced. These considerations are so self-evident that their discussion by me would be quite superfluous.—*British Medical Journal*, Aug. 27, 1887, p. 454.

MIDWIFERY, AND THE DISEASES OF WOMEN, ETC.

84.—ON A METHOD OF TREATING SOME CASES OF SCANTY MENSTRUATION AND OF AMENORRHŒA.

By JAMES BRAITHWAITE, M.D.Lond., Obstetric Physician to the
Leeds General Infirmary.

Putting aside cases of deficient or absent menstruation from constitutional causes and from some ovarian affections, many cases of amenorrhœa, or of very scanty menstruation, remain, in which the fault appears to lie with the uterus alone. Some of these cases are attended with the most distressing symptoms, and when the system generally and the ovaries are healthy, relief is urgently required. This is usually sought by the administration of emmenagogues and other well-known remedies, but usually with very little success. It will, I think, be admitted by all who have frequently to treat these cases that the means at our disposal for doing so are very inefficient. A really good emmenagogue has not yet been discovered. The announcement that permanganate of potash is a reliable one was welcomed by the profession. Cases have been published showing very frequent, if not almost uniform, success from its administration. This has not been my experience, and I have given it in not less than forty suitable cases. Any benefit from its use was very seldom met with.

Many years ago, reflecting upon the hemorrhage caused by intra-uterine polypi, I introduced into the uterus, when I wished to bring on menstruation or to increase its amount, small foreign bodies, which were left in its cavity. At the same time other means of treatment were not neglected, such as the use of hot baths, the administration of iron, aloetic aperients, and alteration in the diet and habits of patients, when luxury and indolence appeared to be at the root of the matter, as they sometimes are. The most convenient foreign body is a piece of hempen ligature, doubled several times, knotted, and impregnated with pitch. These were easily passed up to the fundus without any preliminary dilatation, and left there. Some success resulted from their use; but the uterus generally expelled them before they had done their work, and I therefore abandoned them for a Greenhalgh's rubber stem. This is very efficient, and I have, by means of it, been able to do everything needful in a considerable number of cases. The stem, carefully washed in carbolized water, should be introduced and left in position a week before menstruation is due, or supposed to

be due. Usually a hemorrhage will result within a few days; but the stem should remain *in situ*, whether it comes on or not.

Case 1.—As an instance of the occasional rapidity of this mechanical treatment of amenorrhœa, I can give no better illustration than one I had in December last (1885). A young woman, aged 17, came as an out-patient to the Leeds Infirmary on account of amenorrhœa of four months' duration. She was pale, but not chlorotic, and attributed the amenorrhœa to a chill. No complaint was made of her sight; but on her second visit, in a week, she had to be led into the room, as she was going blind. This loss of sight was already very serious, but it only dated back four days. The disease was ascertained to be optic neuritis, caused by lead-poisoning from the use of dry colouring materials in the manufacture of porcelain. It seemed, however, not improbable that the amenorrhœa, resulting, as it appeared to have done, from suppression by cold, might be a factor in the case, and that relief by a copious hemorrhage from the uterus would be of use. Accordingly, after slight dilatation, I introduced a Greenhalgh, with the result of bringing on within forty-eight hours a very free sanguineous discharge. Remedies for lead-poisoning were at the same time administered. The neuritis, however, was most acute, and ended in permanent blindness. This deplorable result does not impair the case as an illustration of what can be done by this mechanical treatment in suitable cases. The stem was withdrawn by the girl's mother before the next period was due; but menstruation has recurred regularly up to the present time.

Case 2.—Mrs. M., aged 30, married two years, but childless, was of healthy parentage. She appeared to be, although rather pallid, a strong and vigorous woman, fond of out-of-door exercise, and stated that she could walk some miles without fatigue. During 1883, without any assignable reason, her periods became more scanty, and the colour of the discharge paler. Although her complexion was pallid, she was not anæmic or chlorotic. She next began to have headaches at and preceding the periods, and these soon became exceedingly severe, and more or less continuous between the monthly periods. I tried bromides in vain, and permanganate of potash had no effect on the amount of the discharge. Her descriptions of the severity and nature of her head-symptoms were very vivid, and led me to think that if no relief were procured, epilepsy would ensue. A very curious symptom also occurred, which impressed me much, namely, that her hair, which was short, dark, and curly, became within a few months quite grey. Although her appearance was not that of a person suffering from fulness of blood, I felt that the case was very urgent, and accordingly subjected her to the stem treatment, with the result that the next period was copious and prolonged. Her head

was completely relieved; and at the present, two years afterwards, she is in good health.

I could give numerous instances of the success of this mode of treatment, but I have also met with some failures. Still it is the best and most certain means there is of bringing on absent menstruation, or of increasing the flow where it is present but deficient in amount. Any kind of stem may be used. I have found Wynn Williams's very efficient, and it has the great advantage of not being easily expelled from the uterus, which sometimes occurs with Greenhalgh's rubber stem. I have also used Chambers' stem with advantage, but it is liable to "prick," and I prefer the other two. I have also had made what may be called an artificial polypus, to remain entirely *in utero*.

The treatment of amenorrhœa by means of stems is briefly referred to both by Dr. Barnes and by Dr. Edis in their excellent works on Diseases of Women, but the allusion is contained in two or three lines only. There is also a reference to it in a paper by Dr. Routh, in the fifteenth volume of the Transactions of the Obstetrical Society of London, but the case given is one of amenorrhœa from obstruction, and requiring the use of the hysterotome. Treatment of amenorrhœa by dilatation of the cervix has been used in America by Dr. Carstens, of the Detroit Medical Society; and as before the use of a Greenhalgh's or Williams's stem it is generally or often necessary to dilate slightly, this dilatation may to some extent assist in producing the result. For several years I thought this mechanical treatment was original, as the well known galvanic stem acts in a different way altogether, and is considered especially suitable for cases of infantile or undeveloped uterus. I am satisfied, however, that the possibility of treating successfully cases of amenorrhœa and scanty menstruation in the way described is almost unknown to the majority of the profession.—*British Medical Journal*, April 30, 1887, p. 926.

85.—ON A NEW METHOD OF TREATING THE VOMITING OF PREGNANCY.

By WILLIAM DUNCAN, M.D., F.R.C.S., Assistant Obstetric Physician to the Middlesex Hospital.

The complete and rapid relief which followed the local application of cocaine in the three cases here recorded seems worthy of note.

Case 1.—Mrs. W., aged 19 (hospital patient), applied on March 11th, saying she "had not been able to keep anything down for the last month." The patient looked emaciated and ill; she was just two months pregnant with her first child. On examination, the uterus was found to be *markedly anteflexed*, and decidedly tender when pressure was made on the cervix. Sims' speculum was introduced, and the whole of the vaginal roof and cervix freely painted with a 15 per cent. solution of cocaine, a probe covered with cotton-

wool and soaked in the solution being carefully inserted into the cervical canal to the depth of three-fourths of an inch. A dose of peppermint-water was ordered (as a placebo) three times a day. The patient returned on March 18th, saying that *she had not vomited once since taking the medicine*. She has continued perfectly well since.

Case 2.—Mrs. T., aged 26, nearly three months advanced in her second pregnancy, consulted me for severe vomiting, which had existed for a month. On vaginal examination, the uterus was found to be normal in position, but tender on pressure. The same local treatment was adopted as in Case 1. No medicine was prescribed. The result of the treatment was precisely similar, for the patient did not once vomit after the application.

Case 3.—Mrs. G. R., aged 23 (a hospital patient), two months and a half pregnant, applied on June 17th for relief from constant vomiting, from which she said she had suffered for six weeks. On examination, the uterus was found to be somewhat anteflexed. The same treatment as the foregoing was adopted, except that no application was made to the interior of the cervical canal. Peppermint-water was taken three times a day. On June 24th the patient stated that she had had no vomiting for four days after her last visit, but that then it recurred, although in a less severe form. Another application of cocaine was made; but this time the interior of the cervical canal to the depth of three-fourths of an inch was painted. On July 1st the patient said that no further vomiting had occurred. She could take her food with a relish, and was feeling quite well.

Remarks.—If these cases be not mere coincidences, we have in cocaine, locally applied, a most valuable remedy for the speedy cure of that distressing condition—the vomiting of pregnancy. It will, however, be necessary, before we are in a position to form a definite opinion as to its efficacy, to apply it in many more cases, and it is in the hope that all who have an opportunity will try this simple remedy and publish the result, that I venture to report the above cases. It seemed to me that the *modus operandi* of the cocaine would be to remove the morbidly hyperæsthetic condition of that portion of the uterus about the internal os which is supposed to exist in these cases. It is most interesting to note that in Case 1, where marked anteflexion was present, the vomiting completely stopped without any interference with the flexion. It is evident from Case 3 that in order to obtain the full effect of the cocaine it must be applied to the cervical canal, and herein lies the danger, for a careless or unskilful application might easily produce what is of the utmost importance to avoid—viz., abortion; still, with proper care there is very little risk, as I have many times made applications to the cervical canal during gestation without terminating the pregnancy in a single instance.—*Lancet*, Oct. 15, p. 754.

86.—ON MANAGEMENT OF THE THIRD STAGE OF LABOUR.

By ARTHUR V. MACAN, M.B., Master of the Rotunda Hospital, Dublin.

[The following is an excerpt from the able address of Dr. Macan, delivered at the opening of the Section of Obstetric Medicine in the Dublin meeting of the British Medical Association, 1887.]

The next point I would like to bring under your notice is our method of conducting the third stage of labour. As soon as the child's head is born the left hand is placed on the fundus, the ulnar edge being directed towards the vertebral column with the palm of the hand looking directly in the axis of the uterus. The child's eyes are then carefully wiped, and a finger is passed into the vagina to see if the cord be round the child's neck. If uterine action does not soon expel the child, or if it should make any effort at inspiration, showing a want of aeration of its blood, then pressure is made on the fundus, which is generally sufficient to cause the body of the child to be expelled. If it does not do so, then gentle pressure is exerted on the child's head so as to push it backwards against the perineum till the anterior shoulder descends with a well-marked jerk past the pubes, and then the delivery is readily terminated by pressure over the fundus. As the child leaves the uterus the left hand follows down the fundus, and causes any liquor amnii that is still in the uterus to be expelled. The position of the hand must now be the same as before the child was born, that is to say, the ulnar edge must be directed backwards against the woman's spine, and the fundus should be pressed, if anything, forwards against the pubes. The whole hand is now gently rotated, so that the tips of the fingers irritate the posterior surface and sides of the uterus, and more especially the points of insertion of the round ligaments. We can then follow and watch over the alternate contractions and relaxations of the uterus, and judge whether it is becoming unduly distended with blood or not. In the meantime the nurse steadily ties the cord as soon as all pulsations in it have ceased, and then the uterus is never for a moment out of the direct observation of the medical man in charge of the case. Should the child be bodily asphyxiated, that is, in a state of white asphyxia, the nurse should tie and cut the cord at once, and then take charge of the fundus of the uterus, while the medical man takes charge of the infant. When there is any considerable tendency to *post-partum* hemorrhage, it becomes a very nice question whether the medical man should direct his efforts to resuscitating the infant or to stopping the *post-partum* hemorrhage. In any case of doubt the mother's care demands our first attention. If the discharge of blood remains moderate, and there is no accumulation taking place into the uterus, we use gentle friction at intervals for fifteen minutes, and then make firm pressure on the fundus in the axis of the brim

during the acme of a contraction. This is nearly always sufficient to expel the placenta both from the uterus and from the vagina. The hand still, however, commands the fundus, and friction is again applied when we feel the uterine contraction beginning to relax. Should this interval of relaxation pass without any hemorrhage, then we wait for the next contraction, and apply the binder during its continuance. After the binder is applied, the woman again turns on her back, and the hand is rubbed backwards and forwards over the fundus till it is found to be in such a state of permanent retraction as to exclude all danger of *post-partum* hemorrhage.

This is our method at the present time in the Rotunda Hospital, and it has, in all its essential points, been the practice of the hospital for many generations. Thus Dr. McClintock, when writing on this subject in his edition of Smellie's Midwifery, says:—

“Following down the uterus with the hand, as the foetus is being born, and keeping up the pressure until the placenta is expelled and the binder applied, has been the course pursued in the Dublin Lying-in Hospital since the mastership of Joseph Clarke (1786—1793), and is now almost universally followed by all educated practitioners.”

A curious confirmation of this systematic use of pressure to expel the placenta has lately come under my own observation. For on looking over Dr. Charles Johnson's ward-books I find, after a large number of cases entered as hemorrhage before the expulsion of the placenta, the whole treatment compressed into the short and expressive formula the “Placenta pressed off.” And so fully was this looked on as the ordinary treatment of the hospital that nowhere are any directions given as to how this is to be done. This was in the year 1843. A further point that I would wish to emphasise is that when the late Professor Spiegelberg visited the United Kingdom in 1855, the points that struck him most in all that he saw were the use of chloroform in Edinburgh, and the method of conducting the third stage of labour in the Rotunda Hospital. I give this on the authority of the present Professor Leopold, of Dresden. (*Archiv. f. Gynäkologie*, vol. xviii., p. 349.) Indeed, if we consult Spiegelberg's book on midwifery, we will find that he accurately discriminates between the then lately introduced method of Credé and the Dublin method, and gives his verdict entirely in favour of the latter. The late Professor Schroeder, also, whose book on midwifery has gone through eight editions, and is the one universally read by students in Germany, accurately distinguishes the two methods, and adopts entirely the Dublin method. We have, then, the curious anomaly that, whereas in Germany the highest authorities are in favour of the Dublin method, in the latest English text-books the writers recommend Credé's method, or rather, I should say, while describing and recommending the Dub-

lin method, call it Credé's method. As an Irishman, and as the present Master of the Rotunda Hospital, I cannot but hope that after this meeting of the British Medical Association we may find this mistake corrected, and that, in future, this method may be known, after the town in which it first saw light, as the "Dublin" method.—*British Medical Journal*, Aug. 20, 1887, p. 401.

87.—ON RAPID DILATATION OF THE CERVIX UTERI.

By A. H. N. LEWERS, M.D., M.R.C.P., Assistant Obstetric Physician to the London Hospital.

[Dr. Lewers appends to his paper the narratives of six cases in which dilatation of the cervix was performed in the non-pregnant condition, and one in which it was done at the sixth month of pregnancy for the purpose of terminating gestation. We reproduce here only the last and two of the first series.]

The object of the present paper is to draw attention to the safety and other advantages of the rapid method of dilatation of the cervix by means of Hegar's dilators, as contrasted with that of dilatation by tents. Although this rapid method is familiar to gynecologists, it is not by any means so generally well known as it deserves to be—probably because these dilators are not figured in any of the works on diseases of women commonly used in this country; and I think it may be said that when the necessity for dilating the cervix arises most practitioners still rely on the older method—slow dilatation by means of some form of tent. The disadvantages and dangers of tents are, however, so serious, that I think anyone who will give the rapid method a fair trial will be inclined to abandon the use of tents altogether. Dilatation by tents is not uncommonly followed by more or less severe attacks of pelvic inflammation, peri- or para-metritis, and several deaths from their use have been recorded. Probably, if during the process of preparation all tents were impregnated with a powerful antiseptic, these bad results might be avoided. At present this is not done; and even if it were, we could never be personally satisfied that the particular tents about to be used had been efficiently rendered aseptic by the manufacturer. By using Hegar's dilators any danger of septic poisoning can be entirely avoided.

Hegar's dilators are slightly curved ebonite cylinders about three inches and a half long, the distal end forming a blunt cone and the proximal being fitted with a handle. There are twenty-six sizes usually supplied, the transverse diameter varying from one-twelfth of an inch to one inch. (See Fig. 1.) The method of using them is as follows:—The patient is put in the lithotomy position, and the vagina thoroughly syringed with some efficient antiseptic, such as 1 in 2000 corrosive sublimate solution. Sims' speculum is introduced, and the anterior lip of the cervix seized with a pair of vulsellum forceps, preferably a pair having a catch

at the handles like Spencer Wells's forceps. The direction of the uterine cavity is then ascertained with an ordinary sound. The dilators should have been previously placed in numerical order in a shallow porcelain tray and covered with a 1 in 20 carbolic lotion. One of the dilators corresponding to the supposed calibre of the cervical canal is then dipped in carbolic oil and passed through the cervix, which is held steady by the vulsellum forceps in the left hand. If the dilator used only passes with difficulty, it is held in position a minute or two before withdrawing it. It is important to have the next larger size ready to pass at once after withdrawing each dilator. In this way the dilators are passed one after the other till the cervix is sufficiently open to admit the finger. This degree of dilatation is usually obtained after No. 19 of the series has passed. If any morbid condition is discovered in the cavity of the body of the uterus, this is treated by suitable

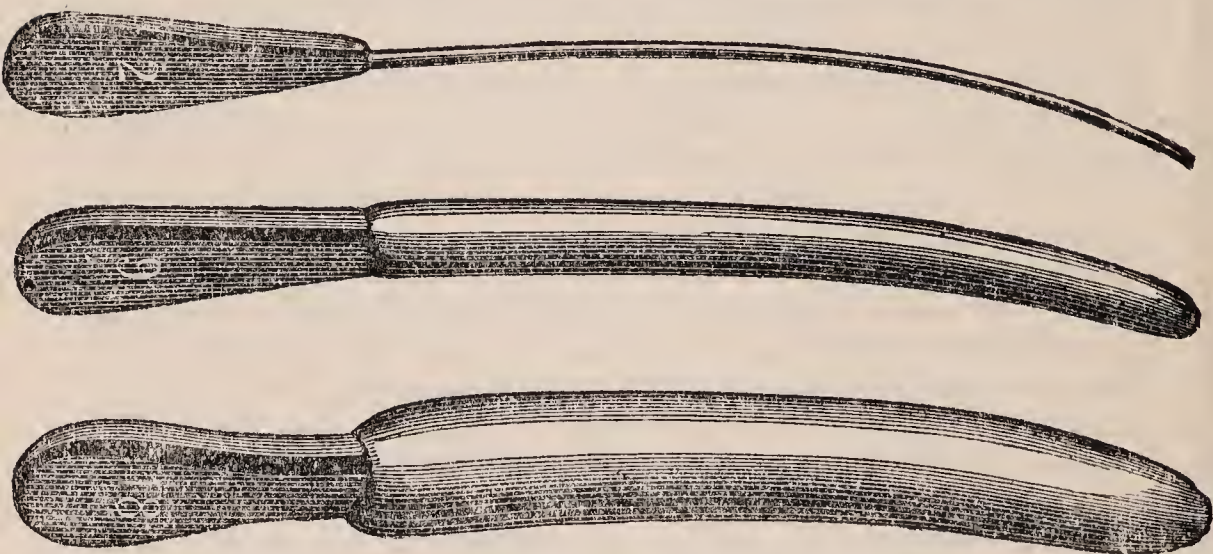


FIG. 1.—Hegar's Dilators.

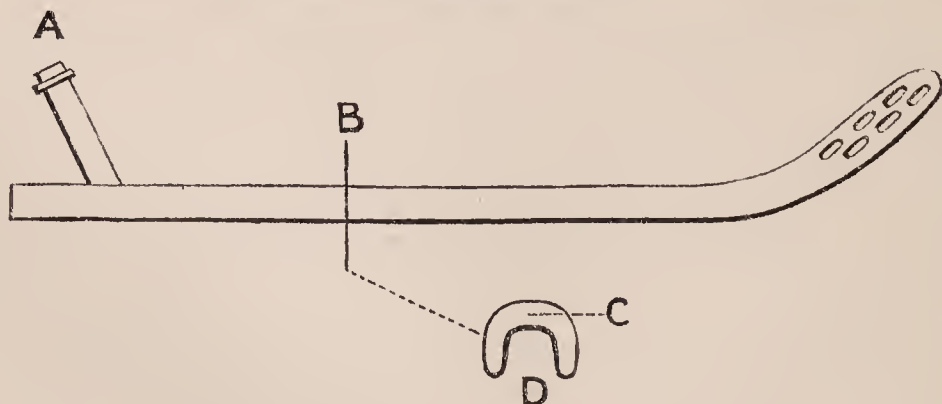


FIG. 2.—TUBE FOR WASHING OUT THE UTERUS.

The indiarubber tube of an ordinary Higginson's syringe fits on at A. The horseshoe shape of the tube on transverse section at any part (say B) is shown. The fluid injected at A passes between the layers of the tube, as at C. This fluid, after escaping from the holes at the distal end, returns along the groove D, which runs on the under surface of the tube for its whole length.

means. Polypi, for instance, or pieces of placenta can be removed. If a growth of doubtful character is discovered, a small portion may be removed for microscopical examination. Whether anything abnormal has been found in the interior of the uterus or not, it is of great importance to wash out that organ with carbolic lotion or iodine water. For this purpose nothing answers better than the double-channelled tube shown in Fig. 2. No matter how tightly the tube may be grasped by the uterus, the fluid injected readily escapes along the deep groove on the under surface. These tubes are made of celluloid or glass. Those used in my cases were of celluloid. Subsequently the patient should have antiseptic vaginal douches three times a day for a few days; iodine water is the antiseptic I usually employ for this purpose. If the dilatation is performed soon after a miscarriage, or soon after labour, no anæsthetic is needed, but in other cases it is necessary. The only objection of importance that has been made to the use of Hegar's dilators is, that they are apt to cause deep lacerations of the cervix. I do not think this is an objection of much practical weight. I have used them in a good many cases, and seen them employed in many others without any laceration occurring, and I think this accident must be due to too great force having been employed. In the following seven cases the cervix was dilated with these instruments.

Case 1.—E. S., aged 39. Married sixteen years; seven children. Admitted into the London Hospital complaining of losing a large quantity of blood on and off ever since a miscarriage she had five months previously, when about three months pregnant. On admission it was found that some blood was escaping from the external os, and that the uterus was enlarged. The sound passed three inches and a half. Four days later, under ether, the cervix was rapidly dilated: the finger passed into the uterine cavity came on several irregular prominences. These were removed as completely as possible. They looked like pieces of placenta. Pure carbolic acid was applied to the interior of the uterus. The temperature after the dilatation was normal for four days. On the evening of the fifth day there was a rise to 101.4° ; the next day the temperature was again normal and continued so. No cause for the rise on that one day was discovered, the patient's general condition being perfectly satisfactory otherwise. Three months later she came to see me. Since leaving the hospital she had menstruated regularly, the periods lasting four days only, and recurring at the proper time.

Case 2.—J. L., aged 40. Married twenty years; six children, the last nine years ago; four miscarriages, the last before the birth of her fifth child. Admitted into the hospital complaining principally that for the previous six months her periods had occurred every fortnight; before that she had been quite regular. No cause for the bleeding was discovered on examination, and,

accordingly, the cervix was dilated rapidly under ether. Nothing, however, was found in the cavity of the uterus to account for the bleeding, and it seemed probable that the menorrhagia was due to the menopause being about to occur earlier than usual. In this case the temperature after dilatation of the cervix never rose above normal.

Case 7.—Mrs. F., aged 37. Married thirteen years; had had four children, the last five years ago; no miscarriages. She was brought to me by Dr. Cockell, of Dalston, complaining of attacks of pain from time to time across the lower part of the abdomen and back, and of irregular hemorrhages. Three months before I saw her she had an attack of bleeding lasting five weeks; then she went a month free from bleeding; then it came on again, small clots being passed. The bleeding continued till the time I saw her. The uterus was about the size it reaches at the sixth month of pregnancy. The patient was a good deal pulled down by the bleeding, and it was clearly desirable that the uterus should be emptied as soon as possible. Accordingly the cervix was dilated with Hegar's dilators. As soon as it was sufficiently open to admit of my finger I felt the placenta attached right over the internal os; in fact, it turned out to be a case of placenta prævia. I separated the placenta all round as far as I could reach, and then ruptured the membranes, brought down a leg, and so delivered. The whole period occupied from the time she began to take the anæsthetic till the uterus was emptied was one hour and twenty minutes. Strict antiseptic precautions were used, the vagina being washed out with iodine water before beginning, and the uterus washed out afterwards with the same antiseptic. Two or three injections of ergotin were given hypodermically during the operation. Dr. Cockell wrote to me some time after to say that the case had done extremely well, and that the temperature had never risen above normal. I certainly think that if this case—one of placenta prævia—had been treated by tents instead of the rapid method of dilatation the record would have been a very different one.—*Lancet*, Sept. 10, 1887, p. 508.

83.—ON THE TREATMENT OF ABORTION.

By JOHN W. BYERS, M.D., Obstetric Physician to the Royal Hospital, Belfast.

[In this paper Dr. Byers, after having briefly called attention to some points in the development of the placenta, proceeds to deal with his subject as follows:]

1st. *Threatened Abortion.*—If the hemorrhage is not severe, if the os is not dilated, and there has been no escape of liquor amnii, we are bound to make an effort to save the ovum. What I rely on myself is absolute rest and some preparation of opium.

(a) The patient should keep on her back, avoid all movement, use the bed-pan (if possible), have a milk diet, and avoid every form of stimulant. By this means the circulation is kept thoroughly quiet. (b) Twenty minims of Battley's solution given twice, at intervals of three hours, and then half this dose every five hours; or half a grain morphin suppository, is the form of opium I like best. In a word, the treatment is very much in threatened abortion like that which the physician employs in hæmoptysis. I have not tried the drug recommended in this condition by our American *confrères*—the liquid extract of *viburnum prunefolium*. They give it in drachm doses every three hours. I have little faith in cold, acetate of lead, or sulphuric acid in the treatment of threatened abortion.

2nd. When, however, from the continuance of the pains, the presence of great hemorrhage, coupled with the dilatation of the os, we feel that there is no chance of saving the ovum, how are we to act? If the abortion occurs within the first couple of months, we should endeavour to do nothing by a too active interference, which would tend to rupture the ovum, so that if possible it may be got rid of unbroken. If the ovum is already in the vagina, or if it has so dilated the cervix that we can work the finger round it, we should take it away. Any part of the decidua attached to the interior of the uterus may be left alone, as it will come away in the discharges. Again, after the fifth month we act precisely as in an ordinary delivery. It is when an abortion occurs between the tenth or twelfth and the twentieth week that one has to deal with the greatest difficulties. While many pelvic ailments take their origin from an abortion, it must be clearly known to all that there are two immediate dangers to which every woman who is the subject of abortion is liable—hemorrhage and septicæmia—and she is only secure against these risks when the uterus has been completely evacuated. Now, in certain cases, if seen early, the cervical canal is so patulous that we can introduce the forefinger, and bring away the whole or part of the placenta remaining, while in others, from the undilated condition of the cervix, this is impossible. In the latter class of cases we give ergot to intensify the uterine contractions, while we place a plug in the cervical canal. By these methods we hope to restrain hemorrhage, to cause separation of the placenta, and to facilitate the introduction of the finger. I usually give two drachms of the liquid extract of ergot at once, and a second drachm in three hours, although others prefer to administer ergotin subcutaneously. I plug the cervix with a sponge or tupelo tent.

In introducing a tent we first give a hot vaginal antiseptic douche, the hands having been previously washed and then placed for a time in a 1 in 2000 perchloride of mercury solution. An antiseptic sponge-tent or one made of tupelo wood (covered with salicylic

cream, 1 to 8 of glycerine) is then passed into the cervix, and retained in position with a piece of iodoform gauze. In six to eight hours the gauze and tent are removed, another antiseptic douche is given, and we proceed, if the cervical canal is dilated, to the complete evacuation of the uterine cavity. It is well to have the bladder and rectum empty. For exploring the interior and evacuating the contents of the aborting uterus there is no instrument equal to the finger, but undoubtedly in certain cases it is difficult to carry it up to the fundus of the uterus. If the patient happens to be a multipara with lax abdominal walls, by placing her on her left side, the pelvis being brought somewhat beyond the edge of the bed, while with one hand we press the uterus downwards from above, we can introduce one or two fingers of the other, so as to separate and bring away any portion of adhering placenta. In primiparæ I have met with considerable difficulties in certain cases from two causes:—Rigid abdominal walls, and small, undilated vagina. In such cases the use of an anæsthetic gives great assistance, but latterly I have found the volsella a most useful instrument. By it we can draw the uterus down from below with one hand, while with the fingers of the other we explore its interior.

3rd. *Incomplete or Neglected Abortion.*—In hospital practice one sees a great many cases of this character. A woman comes to the extern ward complaining that she is losing blood, and, as she puts it, "she is never well." From her history one gathers that after having passed two or three periods she had a sharp flooding, and that ever since she has had an almost constant red discharge. Such forms of menorrhagia are common among married women, and in them a flooding that has set in after one or two periods have been missed should always be regarded as the result of an abortion. In such cases the usual practice is to dilate the cervix, and then to evacuate the interior of the uterus; but I would strongly recommend as a better line of practice the careful use of the curette. It can be done at once, and, if antiseptic precautions are used, this plan is attended with less risk than the use of the tent. In curetting cases with a history such as I have given, one sometimes meets with a bit of placenta or brings away a piece of vascular tissue, which has developed at the place where the placenta was attached.

A patient after an abortion should be kept as long in bed, and as carefully attended to, as after a full-time delivery. In order to aid the involution of the uterus, I have found a combination of ergot and quinine or ergot and strychnine useful.

In the case of a patient who has become pregnant again after having aborted, the greatest care should be exercised during the first four months, and especially at those times when the periods ordinarily would occur, when she should be kept in bed or on the couch. She should not indulge in travelling or carriage exercise at these times, and all strong purgatives should be avoided. Dr.

Jenks (an American) recommends half to one drachm of the liquid extract of viburnum prunefolium, to be taken four times daily at the time the periods should occur, and also for two days before and after. It is not to be taken after the fourth month. In his most admirable annotations in "Smellie's Midwifery," the late Dr. M'Clintock recommends chlorate of potassium and the tincture of iron in cases where the death of the foetus is not traceable to a syphilitic taint in either parent. He says it should be commenced some weeks before the time at which the death of the foetus is likely to occur (as shown by the history of the woman's previous pregnancies), and be continued up to the time of labour.—*Dublin Journal of Medical Science, July 1887, p. 2.*

89.—OUGHT CRANIOTOMY TO BE ABOLISHED?

By JOSEPH GRIFFITHS SWAYNE, M.D., Consulting Physician-Accoucheur to the Bristol General Hospital.

[This admirable paper, of which we are able to reproduce only the concluding portion, forms, as it were, Dr. Swayne's contribution to the recent discussions on the relative positions of Craniotomy and the Cæsarian section.]

To answer the question, "Ought craniotomy to be abolished?" fully and finally, we ought to regard it in its relations to the three degrees of pelvic deformity which are given in all obstetric works. Firstly, in those cases in which the conjugate diameter is between three and four inches, where it is possible to deliver a living child by the forceps. In this class of cases craniotomy should not be abolished. If the child be dead, it is then to be preferred to the forceps. If it be alive, it is the only safe *dernier ressort* after the forceps or turning have been tried and have failed. Secondly, in those cases in which the conjugate diameter is between two and three inches, rendering it impossible to deliver alive a child of ordinary size at the full term. In cases of this kind, undoubtedly, craniotomy ought to be abolished. The child's life ought to be saved by laparotomy, at the least possible risk to the mother. To insure this, the Cæsarian section ought to be an operation of election, and not a last resource. It should be done at the beginning of the labour, and under the most favourable conditions. For instance, the strictest antiseptic precautions must be adopted; and in the case of the very poor, the woman should be removed, if possible, from her ordinary surroundings into some well-regulated lying-in hospital. As Dr. Routh very justly remarked in the course of the discussion at the Gynæcological Society: "In a hospital with all the necessary appliances, surgical and antiseptic, and with qualified assistants and an accustomed operator, the case was very different from what occurred in some of the slums of a town. In an ill-ventilated room, dirty, the sleeping, eating, dying

room, especially if small, what were the chances of success, either to mother or child? We should never forget that if abdominal surgery was more successful now than formerly, it was wholly owing to the system of cleanliness and antiseptics employed. When a man was suddenly called to an urgent case at night in one of these slums, surely craniotomy offered the best chance to the mother." Cases of this kind are pre-eminently suited for the induction of premature labour; if the accoucheur has the good fortune to see his patient, and make a careful examination of her pelvis a few months before delivery, he may thus avoid the dreadful responsibility of having to choose between craniotomy and the Cæsarian section. Thirdly and lastly, craniotomy ought to be abolished in those cases where the conjugate diameter is under two inches. It is true that even in such cases it is sometimes possible to deliver a mutilated child by the cephalotribe, or even by craniotomy; but the operation is so difficult and dangerous to the mother, if it succeeds, that the risk she would incur would be almost, if not quite, as great as that of the Cæsarian section; and if it fails, the Cæsarian section would have to be done under the most unfavourable conditions. There should be no hesitation, then, in at once adopting the latter operation, and thus saving, if possible, the lives of both mother and child.—*Bristol Medico-Chirurgical Journal*, March 1887, p. 14.

90.—ON THE CAUSES OF DEATH AFTER CÆSARIAN SECTION, AND THEIR PREVENTION.

By R. J. KINKEAD, M.D., Prof. of Obstetrics, Queen's Coll., Galway.

The causes of death after Cæsarian section are, shock and exhaustion, hemorrhage, peritonitis, septicæmia, and incarceration of intestines. The liability to all and each, save perhaps the last, is enormously increased by delay. Every hour spent in unavailing labour adds to the danger; yet it is impossible, with the dogmas drilled into their heads, (1) that the operation is sacrificial, (2) that craniotomy ought to be performed even with an inch and a half or one inch conjugate, but that men should hope against hope to effect delivery *per vias naturales*, and should put off to the last the evil hour. Then, when the patient is exhausted by pain and fruitless expulsive efforts; when structural change, produced by protracted uterine contractions, has taken place; when her nerve-force is expended, her vital powers failing; when she sinks from the shock, or falls a victim to the sequelæ almost necessarily resulting,—the case is quoted as an additional item in the sum total testifying to the essentially fatal nature of the Cæsarian section.

The shock of the operation is not greater than that following ovariectomy. It has been successfully combated in the latter; it follows that it can be as successfully dealt with in the former.

Hemorrhage is a more formidable antagonist both during and after operation. I doubt if it is more liable to occur from the placental site (if unwounded) than after ordinary delivery; and the prophylactics against it are early operation, ergot, and styptics.

The real risks result from the uterine incision, and no one can read the histories of Cæsarian cases without being struck by the very eminent peril from this source. But are we powerless to deal with this danger? Are we unable to reduce it to a minimum? The plan of constricting the cervix uteri by a wire or elastic ligature, prior to making the incision for extracting the child, was I believe, first suggested by Litzmann, of Kiel, and was probably taken from Porro's method. A decided improvement on this plan was carried into effect by Dr. Anna Broomall. The case is reported in the *Medical Times and Gazette* of November 3rd, 1883. It consisted in turning the uterus out of the abdomen, and grasping the cervix with the hand. Although the placental site was cut through, not a drachm of blood was lost from the uterine incision. Therefore, by means of compression of the cervix with either a wire, an Esmarch's tube, an elastic band, or the hand, we can perfectly control the circulation, and prevent hemorrhage during the operation. After it, if a permanent condition of contraction obtain, there will be no hemorrhage. But we cannot with certainty calculate on such a contractile condition. Trusting to contraction absolutely or effectively to control hemorrhage, is placing reliance on a chance. Security can only be obtained by satisfactorily suturing the uterine incision.

Keeping the edges of the uterine incision in apposition, and so promoting their rapid union, not only prevents bleeding, but guards against the other dangers of septicæmia, peritonitis, and incarceration of intestine.

The mistake hitherto made has been that of using the interrupted suture in a mobile constantly contracting body like the uterus; consequently, the wound has gaped between the sutures; or they have been torn out; or when gut has been used, the knots bathed in and softened by moisture, have untied, and either bleeding has occurred, or discharges have been poured into the peritoneum.

Sanger suggests a method, which, to a certain extent, is approved of by Leopold, for example, dissection of peritoneal flaps and resection of uterine tissue, so as to bring the peritoneal surfaces together; but if the continuous suture be used, this process is altogether needless. Antiseptic catgut, as soft and pliable as silk, can be left with safety in the uterine wound and within the abdominal cavity. With a continuous suture of this material, the edges of the uterine wound can be brought into, and kept in, accurate apposition. There are no knots to untie. Uterine contraction cannot separate the edges of the wound, neither can hemorrhage take place, nor lochial discharge escape into the

peritoneal cavity, nor can the intestine become incarcerated. It is curious in how few cases sutures have been used at all, and in only two have I been able to find a report of the use of the continuous suture. Both of these were operated on by Sir Spencer Wells. One recovered, and the other died; in the latter, it was discovered at the post-mortem examination that the suture had worked its way out of the upper half of the uterine wound.

This appears to have resulted from one end of the suture being left free in the abdomen, and the other brought out of the vagina, in order that by pulling on the vaginal end, the entire suture might be removed.

The use of antiseptic catgut obviates entirely the necessity of removing the suture; there is, therefore, no reason why the ends should be left free. But as experience has shown that knots on catgut used to suture the uterus untie, both ends of the suture should be brought out through the vagina, or through the lower angle of the abdominal wound.

A striking fact observable in reports of Cæsarian cases is the rapidity with which the abdominal wound is closed, as if the object was to get the whole thing done with and put out of sight as rapidly as possible. Granting the importance of rapidity, yet the cleansing of the abdominal cavity, and the closure of the uterine wound are more important.

If, as I believe it can be, the mortality after the Cæsarian section is to be reduced to the level of that of ovariectomy, the same care must be taken in every step of the one that experience has shown to be needful in the other.

If the operation is performed before the vital powers are weakened and the uterine tissues injured by protracted parturition; if it is done with the means at our disposal for controlling hemorrhage, with the continuous suture, with thorough cleansing of the abdominal cavity, with scrupulous cleanliness and care in every stage, I have no doubt but that it would be as safe for the mother as craniotomy, and that, considering the very high probability of saving the child, it ought to have a prior place to the only operation sanctioned by surgery which is undertaken with the avowed object of destroying life.

Finally, I would point out that, to reduce the bulk of the child, or to extract its mutilated remains, though a pelvis of $2\frac{1}{2}$ or less conjugate, is an operation of extreme difficulty; one occupying a very considerable period of time, and needing for its successful accomplishment, as far as the mother is concerned, very great experience, and an amount of manual dexterity hardly to be acquired outside of large cities; while, on the other hand, the Cæsarian section is an easy operation, capable of successful performance by any surgeon of ordinary skill.—*British Medical Journal*, Oct. 2, 1886, p. 626.

91.—NOTES OF A CASE OF PORRO'S OPERATION.

By Sir T. SPENCER WELLS, Bart., F.R.C.S., Surgeon to the Queen's Household.

So far as I have been able to ascertain, the case I now publish is the third in the United Kingdom where mother and child have both been saved by Porro's operation. The first was Dr. Godson's, the second Dr. Galabin's. In both these cases the impediment to parturition was deformity of the pelvic bones, the uterus not being diseased. In my case there was no pelvic deformity; but the presence of a large, solid, immovable uterine tumour rendered delivery by the natural passage impossible.

On May 7th, 1887, I saw a lady who had arrived in London that morning from Leeds. She was 37 years of age, and was married in April, 1880. She gave me a letter written the day before by Mr. Scattergood, of Leeds, containing the following history of her case:

"On Wednesday last I was sent for to see her at her residence four miles from Leeds, and met in consultation Dr. Glaister, her old medical attendant, who was leaving the village that day, and Dr. Stevenson, his successor in practice, who had only been in residence about a week. Having known the lady before her marriage, I had seen her in consultation about a year ago, and knew her to be the subject of extra-mural fibroids. In the beginning of November last, I saw her again, the question which had then arisen being a possible pregnancy dating from August 8th, 1886. Dr. Glaister and I then came to the conclusion that in all probability she was not then pregnant. The pelvis contained a large, hard tumour almost filling its brim, projecting low into the vagina, and making it almost impossible to feel the os uteri high up behind the pubic bone. I heard nothing more of the patient until a few days ago, when her husband called upon me and said that his wife was believed to be near her confinement. An immediate inquiry into her condition seemed imperative, and accordingly we met on Wednesday, May 4th. On examining her, the fibroids apparent on uncovering the body showed a movement which appeared to be the result of intermittent and almost rhythmical contractions of an enlarged uterus. We could not detect a foetal heart-beat, nor feel active movements; but the lady asserted that she regularly felt the latter, and Dr. Glaister is confident of having heard the foetal heart about a fortnight ago. It seemed to us that, as delivery *per vias naturales* could not take place, owing to the firm blocking of the pelvic brim, the probable alternative is Porro's operation."

The patient arrived in London in great discomfort, but not having suffered much from the railway journey; and I found, as Mr. Scattergood described, the pelvis completely blocked up by a solid tumour, the os uteri quite out of reach, the abdomen filled by a solid tumour, on the surface of which were several separate and

movable masses, apparently outgrowths from the main tumour. To the right of the umbilicus was a solid mass, *balloting* freely, and capable of being pushed downwards and to the middle line. This, I felt confident, was the foetal head. I could not clearly detect foetal heart-sounds, but the placental murmur was very distinct to the left of the umbilicus and in the left iliac region.

By my desire Dr. Matthews Duncan made a careful examination of the patient on the following day (May 8th), and we saw her together on the 9th, both agreeing that Porro's operation offered the best prospect of life both to mother and child; and Dr. Duncan saying very distinctly that he believed delivery by the vagina (by craniotomy, evisceration, or any obstetric operation) was impossible. The chief point for consideration was whether, the full period of pregnancy expiring on the 13th, we should wait for that time, or for signs of commencing labour, or operate without delay. We decided upon the latter course, mainly on account of the very natural anxiety of the patient and her husband.

On the 11th of May, at 9 a.m., Dr. Day administering bichloride of methylene, and, assisted by Mr. Meredith and Dr. Godson (who undertook the care of the child), Mr. Scattergood, of Leeds, and Mr. Bishop, of Manchester, being present, all the preparations were made precisely as for ovariectomy, with all the usual antiseptic precautions, including the use of spray. I divided the abdominal wall in the median line, midway between the umbilicus and pubes, to an extent of about five inches. The uterus was free, but was covered by layers of broad ligament extending upwards from the bladder. Some of these were divided and pushed aside and downwards, and the uterine cavity was opened by careful puncture. As the liquor amnii escaped I tore an aperture in the thin uterine wall large enough to enable me to draw out the child's head. The body followed immediately on very slight traction. The funis was compressed by two pairs of forceps and divided between them. Dr. Godson took charge of the child, which cried loudly. I did not interfere with the placenta, and finding that the opening in the abdominal wall was not long enough to allow the uterine tumour to pass out, I enlarged it as high as the upper border of the umbilicus, so that the opening was about seven inches in length. I was then able to draw out the uterus with the main tumour which had filled the pelvis, and several sub-peritoneal outgrowths, with both ovaries. As just stated, the bladder was partially separated from the uterus before opening the cavity. I now completed this separation, carefully pressing the bladder forwards as Mr. Meredith passed a constricting wire around the base of the tumour, and gradually tightened it by the screw. I was naturally uncertain as to the exact position of the ureters, under such altered conditions, and therefore kept the wire more upon the base of the tumour than was perhaps quite necessary. But when it was tightened, and I

had cut away the whole mass some two inches above the wire, the stump was not much larger than a five-shilling piece. I cut away as much of the solid tumour, after further tightening of the wire, as could be done safely, and passed a long pin through the remaining stump across from side to side just above the wire. On proceeding to sponge the peritoneal cavity I found a free tumour as large as a flattened orange, surrounded by and closely connected with the cæcum, the appendix cæci, and a piece of omentum. The separation of this tumour from its connections had to be effected with extreme care, and added considerably to the time occupied in the operation. Several ligatures were applied during the process, and parts of the separated omentum were cut away. The opening in the abdominal wall was then closed by silk sutures precisely as in ovariectomy. The stump was fixed at the lower angle of the wound, the lowest suture being passed not only through the parietal peritoneum and abdominal wall on each side, but also through the peritoneal coat of the stump just below the constricting wire. Salicylic wool was then pressed all round the stump under the pin, and the surface of the stump was saturated with perchloride of iron. The abdomen was then covered with pads of salicylic wool and supported by strips of adhesive plaster and a flannel belt.

No provision was made for drainage. The time occupied from the commencement of inhalation of the anæsthetic until the patient was in bed was fifty minutes. From three to four pints of liquor amnii are supposed to have escaped, but the quantity was not measured. The child weighed six pounds. The uterus with the tumour and placenta weighed nine pounds. It and the detached outgrowth were sent to the museum of the College of Surgeons on the day of operation. They may be seen there, and it may be observed that the placenta is partially detached, the uterine cavity nearly closed, and the cervical canal open. As the wire must have been constricted at least an inch below the spot where the cervix was divided, it is almost certain that the whole uterus must have been removed.

Nothing could have been more satisfactory than the progress of the patient after operation. The breasts gave no trouble, and there was no sign of milk. There was no vomiting, and no interference with bladder or bowels from the depressed stump—nor any flatulent distension of the abdomen, although there was a good deal of pain at times for several days, always relieved by the passage of flatus, and requiring rather more opium than usual. This was given by the rectum in doses of fifteen minims of laudanum. The highest temperature noted was about thirty-six hours after operation, 101.2° F. It remained about 99° until the fifth day, and then became about normal. The pulse was about 100 to 116 until the fifth day, when it gradually fell to about 80. The urine was for some days loaded with lithates, and after a week

contained a good deal of mucus for a few days, but it was quite normal by the time the pin and wire came off on the fourteenth day. I had not touched the dressing until the seventh day. Then the wool was changed, the wire tightened, some shreds of the stump cut away. After this, dry cotton and iodoform in powder were applied fresh once a day, and the screw occasionally tightened. The sutures, except the lowest, were removed on the seventh day, union of the abdominal wall being perfect. Four weeks after operation—June 8th, 1887—both mother and child are, as they have been throughout, as well as after a natural labour. About half an inch remains unclosed at the lower end of the cicatrix, but the granulations are quite healthy.—*British Medical Journal*, June 14, 1887, p. 1267.

92.—ON THE INDICATIONS FOR AND METHOD OF WASHING OUT THE PUERPERAL UTERUS.

By J. HALLIDAY CROOM, M.D., F.R.S.E., Physician to, and Clinical Lecturer on Diseases of Women, Royal Infirmary, Edinburgh.

At the outset, let me say that no one deprecates more than I do any manual interference with the parturient or puerperal uterus more than is absolutely necessary. Every examination made during labour is a possible source of infection, and still more so any opening up of the genital canal after labour develops a fresh source for the introduction of septic material in the still fresh wounds. Equally do I discourage the meddlesome interference of nurses with douches, syringes, and so forth, as routine in every case of labour, at least in private practice. I am very sure that the less the vagina is opened up the better will it be for the patient. If this be true of the vagina, still more is it so with regard to the opening up and interfering with the uterine cavity. Still there are conditions where interference with the caverni uteri becomes a pressing necessity. Let me try to formulate the circumstances under which antiseptic washing out of the uterine cavity is indicated.

Indications—1. Where, with localized tenderness over the uterus, there is a high pulse and temperature, and a foetid discharge. It is to be observed that the discharge must be foetid *from the uterus*. In order to decide this question, it is essential to wash out the vagina with an antiseptic wash—inodorous, such as corrosive sublimate—and then putting the finger up and into the cervix to decide whether it is foetid or not. As I shall have occasion to point out in the sequel, all first washings out should be performed under chloroform, therefore I always explore the cavity of the uterus with the finger. I need not here refer to the ease with which this can be performed, at least during the first week of the puerperium. Even at a long period after labour, the carbolyzed fingers can be comparatively easily introduced. In most cases some

morbid product will be found, and in all cases the necessary dilatation of the cervix will much facilitate the process of washing out.

2. Where, with a high pulse and temperature, there is any question as to the absolute complete delivery of the placenta; and in this connection it is impossible to emphasize too strongly the importance of examining closely the placenta after delivery, whether it be expressed, extracted, or delivered spontaneously. Such care will often eliminate at once any possible cause of infection.

3. Where portions of membrane have been retained *in utero*, and give rise to increase in pulse and temperature. Here, however, let me say it is possible to do harm in endeavouring to remove the membranes completely at the time of delivery. It is much better to leave a portion of membrane than to open up the genital canal in search for a small piece.

4. After the birth of a putrid foetus.

5. Where the uterus remains abnormally large after labour, and where, as a result, owing to the presence of decomposing clot, symptoms of septic infection develop themselves. In such cases washing out ought to be accompanied by the introduction of the finger within the uterus, and in all such cases quinine ought to be administered in large doses.

6. In cases where, late on in the puerperium, symptoms of septicæmia develop themselves.

7. In those somewhat rare, yet well-recognised cases where, from acute flexion of the uterus, the lochia are retained and decompose.

8. In some cases of imperfect abortion and premature labour, and in all cases where the uterus, under such circumstances, has been curetted.

9. In all cases where the hand has been introduced—say in cases of post-partum hemorrhage, adherent placenta, or uterine hydatids—washing out the uterus with hot antiseptic water is the recognised treatment.

Rationale.—What is the rationale of washing out the puerperal uterus in septicæmia? It seems at first sight open to doubt how far washing out the uterine cavity can prove effective in checking septicæmia if rapidly-multiplying microbes have already passed into the system.

This point was alluded to during the interesting discussion which took place last session on the relation of micro-organisms to puerperal fever, viz., that micro-organisms require the condition of rest for their development. They do not multiply in the circulating blood.

Method.—As far as my experience goes, a good deal of misunderstanding exists as to the proper method of carrying out this operation. The following points seem to me worthy of attention:—

1. The patient ought to be so placed that her shoulders are raised while her pelvis is depressed. This is just the converse of

what is required in gynæcological douching—the object being to prevent any quantity of the lotion remaining *in utero* by giving it free escape. Two methods of accomplishing this can be adopted—either by placing the patient on her back in the bed with a douche pan placed underneath her buttocks, or else that she be placed transversely across the bed with her hips depending across its edge. The latter seems to me the more convenient and satisfactory.

2. Care should be taken that the os uteri is patent, so as to allow a free escape of fluid. Frequently, however, it is closed, and when such is the case recourse must be had to the grooved glass tubes, or to the double channelled catheter. The glass tubes are the more generally applicable, for one amongst other reasons, as the sublimate solution corrodes a metal instrument, and the eye of the catheter readily gets blocked.

3. The continuous douche is preferable to the ordinary syringe; but inasmuch as the douche can is not always at hand, the syringe will be the most usually available.

4. The tube should be carried right up to the fundus uteri, and if the syringe be employed it ought to be used slowly, steadily, and without jerking.

5. The fluid ought to be injected at a temperature of about 115° F., and continued until it return quite clear and sweet, or at most mixed with a little pure blood. Special attention ought to be paid to having the temperature high, so as to induce uterine contraction, and that for two reasons—(1) Because the uterus in these cases is usually atonic; and (2) specially in those cases where corrosive sublimate is employed, so as to insure that none of the salt remains in the uterus to act as a poison.

6. A point of essential importance is that the fundus uteri should be grasped by the hand of an assistant in such a manner that the thumb and middle finger compress each Fallopian tube, so that at one and the same time the fluid may be squeezed out of the uterus, brought intimately in contact with the whole uterine surface, and prevented passing above the Fallopian tube. It must be borne in mind that the puerperal uterus is frequently rotated on its transverse axis, and therefore must be grasped obliquely.

7. I would strongly urge that the patient should be placed under chloroform for at least the first washing out. I am confident that many cases suffer from the want of this precaution; because, owing to the tenderness of the parts, it is impossible to manipulate the uterus and instrument properly, the tube being not carried beyond the os internum, if so far. And, besides, it gives the operator the opportunity of exploring the cavum uteri, if need be; and I may add, it is usually best to do so.

Form of Antiseptics.—The only two forms of antiseptics which are sufficiently reliable are either carbolic acid or corrosive sub-

limate; and of the two, corrosive sublimate seems, with proper and careful precautions, to be the form upon which most dependence can be placed. It is not, however, without its objections. The ease with which it is absorbed, and the small quantity required to produce its toxic effects, must be kept strictly in view in using it. Not only is it readily absorbed by the uterus, but even when used for the vagina alone its poisonous effects become manifest; and there are not wanting numerous cases where serious corrosive sublimate poisoning has taken place, some of which have ended fatally.

Keller has shown that in most cases mercury can be detected in the urine after irrigation of the uterus or vagina with sublimate solution of the strength of 1 in 1000 or 1 in 2000, but, of course, most frequently after washing out the uterine cavity. I have myself been able to detect it in my hospital cases when the solution has been much weaker, and in one case where the vagina alone was syringed with a solution of 1 in 3000 before labour, I found traces in the urine.

In using corrosive sublimate care must be taken that the solution be not stronger than 1 in 4000 or 1 in 5000. The numerous experiments of Koch, Tarnier, and others, have shown that this is strong enough for all practical purposes. There are, however, two conditions in which it is of the utmost importance to be careful in the use of corrosive sublimate, and these are in profound anæmia, and where there is any kidney disease. In both of those cases carbolic acid will be found a more suitable and safe antiseptic.

Contraindications.—To the uniform employment of intra-uterine douching there are, of course, contraindications, or rather I should say conditions, which render the employment of it impracticable; such are the presence of perimetritic or parametritic inflammation, with or without deposit. In such cases intra-uterine douching will not only do no good, but it will probably render matters considerably worse. It will do no good, because the source of infection has passed from the uterus into the veins in the broad ligament, or into the lymphatics, and hence the washing out will not reach the source of the evil, and it may make matters worse, for it will increase the inflammation in the surrounding tissues.—*Edinburgh Medical Journal*, May 1887, p. 980.

93.—ON ACUTE EPIGRASTIC PAIN IN PUERPERAL ALBUMINURIA.

By JOHN PHILLIPS, M.B. Cantab., M.R.C.P., Physician to the British Lying-in Hospital, London.

The object of this brief notice is to draw attention to an important but apparently neglected premonitory symptom, sometimes occurring in cases of albuminuria in pregnancy. Cephalalgia and derangements of vision are usually given in every text-book as

precursors of puerperal eclampsia. In a few cases, however, either in addition to, or without these two, we find albuminuric pregnant women suddenly attacked with acute epigastric pain. A case of this kind has recently been under my care. The patient, aged thirty-eight years, with six children, was in the seventh month of her seventh pregnancy. For three weeks she had had swelling of the hands and feet, with puffiness of the lower eyelids. There was occasional supra-orbital headache, but at no time was there difficulty of vision. When I first saw her I found œdema of the lower extremities extending to half-way up the thighs, the hands were swollen, the face puffy, and the skin harsh and dry. There was no pulmonary œdema, and the heart-sounds were quite normal. The urine was acid, of sp. gr. 1028, and contained one-tenth albumen with a few hyaline casts. Under treatment she improved very much, but at the end of fourteen days the œdema began to return, and she was seized with acute pain in the epigastrium passing through to the back. It was paroxysmal in character, the intervals of relief varying from ten minutes to an hour in duration. Subcutaneous injections of morphia were given, and with some success. The pain continued for two days, and as it seemed rather to increase than otherwise, I induced labour with a catheter in the usual manner. A perfectly easy labour followed, and without any convulsive phenomena. She assured me that the labour pains were nothing in comparison to those in the epigastrium. A few hours after the termination of the labour the acute pain gradually ceased, and ten days later all albumen had disappeared from the urine.

The literature on the subject appears to be very scanty. Among our modern text-books Leishmann is the only writer who describes it. He quotes Chaussier to the effect that the epigastric pain is of much less frequent occurrence than cephalalgia and visual derangements. "The suffering is described as being extremely severe, lasting often for hours; and when it is of unusual severity it is said to be an almost certain precursor of a convulsive attack." Quite recently Goss described a typical case of this kind. In his patient there was slight œdema of the feet, but no headache or dimness of vision; she suffered intensely from epigastric pain for five hours, morphia giving her some relief. Without any warning she was seized with a convulsion, and died comatose in an hour's time; the child was delivered by artificial means, labour not having manifested itself. In the discussion which followed the reading of this case, Dr. Doe gave the particulars of a case which had occurred in his practice. The patient was delivered of twins, and before, during, and immediately after the labour there were no symptoms of renal trouble. Eleven hours later she began to complain of severe epigastric pain, which steadily increased, and in four hours a series of convulsions seized her, and she died comatose in a few hours. Dr. Abbot related the case of a lady in whom

these acute symptoms had appeared in two successive labours. In the first, after five days of intense agony, and in consequence of increasing dyspnoea, premature labour was induced; an easy labour followed, and there were no convulsions. The gastralgia disappeared as the labour progressed, and the urine became normal shortly after the birth of the child. In the second labour, three years and a half later, the pain was worse than before. Confinement took place spontaneously at the seventh month. Recovery here was much slower, the gastralgia requiring treatment for fourteen days afterwards. In addition, she was nearly blind, sight only being restored after some weeks. She ultimately made a good recovery. The above cases, five only in number, are all I have been able to meet with; and although few conclusions can be drawn from them, they indicate the reality of such a symptom occasionally existing, and the necessity for prompt treatment. The pain passes from the epigastrium to the back of the lower chest; it may be variable in degree, but is usually agonising in character. Pressure and vomiting appear to relieve it somewhat. It is paroxysmal, and, although usually occurring ante partum, may, as in one case detailed, arise afterwards. Convulsions may or may not follow its advent. The pain appears to arise from some perversion of nutrition of the solar plexus; probably the circulation of vitiated blood in its substance may be the primary factor. Another point in favour of its nervous origin is that three out of the five patients suffered severely from neuralgia in other parts of the body.—*Lancet*, April 2, 1887, p. 677.

94.—FIBROUS POLYPI COMPLICATING THE PUERPERIUM.

By J. HALLIDAY CROOM, M.D., Physician for Diseases of Women to the Royal Infirmary, Edinburgh.

[After some reference to previously recorded cases, Dr. Croom narrates two cases which have come under his own observation.]

Case 1.—Mrs. S. came under my observation years ago as an hospital out-patient. She had an enlarged retroverted uterus. For this a sound was passed and a Hodge pessary introduced, and shortly afterwards she became pregnant, and was delivered at term. Two years ago she came under my care again, at St. Luke's Home, suffering from menorrhagia as well as intermenstrual hemorrhage. The uterus was found enlarged two inches in the first stage of retroversion. A fibrous polypus was suspected, and after considerable trouble I managed to dilate the cervix sufficiently with Tupelo tents to allow me just to feel the base of the tumour. The uterine contractions which this occasioned, however, were so violent, and the pain and general disturbance so great, that I was obliged to desist. She passed then into the hands of my friend Dr. Kirk, of Bathgate.

I heard no more of her until she was sent back to me by him.

with her uterus enlarged to the umbilicus, and with her menstruation suppressed for five months. In the note sent to me with her by Dr. Kirk he expressed the opinion that pregnancy alone accounted for the condition. On her arrival in the town I examined her, and found the uterus enlarged corresponding to a six months' pregnancy. The cervix was somewhat dilated, and through it I could feel the membranes with difficulty. Ballottement could be practised. There could be no doubt that she was pregnant. The following evening labour pains supervened, and she was delivered of a five months' foetus and placenta. Accompanying the third stage there was very profuse hemorrhage, so much so that I was obliged to explore the interior of her uterus, which I did under chloroform, and with the assistance of my friend Dr. Milne Murray.

Attached to the fundus by a thick, though soft pedicle, I found a well-marked fibrous polypus, about the size of a small orange. After consultation with Dr. Murray, we determined, owing to the patulous condition of the os and its easy access, to remove the tumour. Fixing a volsella through its substance, and at the same time steadying the fundus uteri, it was easily removed by avulsion. The hemorrhage ceased and the uterus firmly contracted. Immediately after its removal the cavity of the uterus was washed out by a hot uterine douche of 1-2000 corrosive. The following day the uterus was again washed out. There was no hemorrhage, but large pieces of apparently bleached decidua passed, with large extremely foetid sloughing masses.

On the third the patient was quite well. On the fourth day the discharge was offensive, and was accompanied by flaky pieces of foetid decidua. The uterus was again washed out. For two days thereafter the patient continued to do well, but on the second day there was a rise of pulse and temperature, extreme tenderness over the abdomen, and she died apparently from acute septicæmia on the following morning. No post-mortem was allowed.

I attribute the death of this patient to septicæmia, due to gangrene either of the stump of the tumour, or else to a second polypus becoming gangrenous through the admission of air. The former is, I think, the most likely explanation, judging by the early appearance of the flaky sloughing mass, and the fact that the discharge was offensive from the first.

Case 2.—Mrs. C. S. was delivered after a normal labour. On the fifth day post-partum, the hemorrhage being profuse and noticeably offensive in character, my friend Dr. John Playfair—under whose charge the lady was—proceeded to explore the cavum uteri, and found an irregular rough body projecting into it, which he diagnosed to be a uterine polypus. He asked me to see the case with him. With careful antiseptic precautions I dilated the cervix uteri with my fingers, and at the fundus uteri I discovered the

mass which Dr. Playfair had described to me, and finding it pediculated and soft, easily twisted it off with my fingers. The mass was about the size of a Tangerine orange, and of the usual structure. The discharge for many days was very offensive. The uterus was washed out daily with warm corrosive, and the lady made an excellent recovery.

The two cases which I have just recorded present characteristic examples of a rare complication of the puerperium. Judging by the records of the cases recorded, many of these polypi were extruded spontaneously. The presence of such growths during the puerperium is not without grave danger. Sometimes they soften, break down, and decompose, and are the cause of peritonitis, and become the seat of gangrenous degeneration. This is chiefly the case in the submucous fibroid projecting into the cavity of the puerperal uterus similar to those which I have just recorded.

Similar cases are related by Senderling, Yeld, Kiwisch, Wynn Williams, and Duncan. Wynn Williams relates a case where a large submucous fibroid, which obstructed labour, was enucleated and removed in his efforts to break up the child. Weber relates a case in which turning had been had recourse to, and where a tumour as large as a man's fist was removed with the placenta.

Grouping together the cases which have hitherto been described, and adding my two cases, it is convenient to arrange them thus:—

1. Non-gangrenous, in which a healthy tumour was expelled without any artificial aid	5
2. Gangrenous	6
3. Gangrenous, or non-gangrenous, removed artificially with hand or instrument	10
These constitute, so far as I know, the cases recorded, — making a total of	21

As the practical deduction from these we may formulate the rule, that when the tumour is easily accessible, and can be removed without a severe operation in the first few days of the puerperium, such artificial removal ought to be had recourse to in order to prevent the possibility of gangrene and septic absorption. Care must be taken that the whole tumour be removed, in case of the base sloughing and giving rise to septicæmia, as in my first case. If there be any doubt as to the possibility of its entire removal, it had better be left alone and allow nature to expel it spontaneously. If, however, the removal involve a severe operation, it would obviously be prudent not to interfere. Of course in those cases where the tumour gives rise to septicæmia late in the puerperium, its immediate removal is matter of necessity. In all cases of removal of these growths in the puerperium, too much stress cannot be laid on the extreme importance of washing out the cavity of the uterus with corrosive daily, until every trace of fœtor has disappeared. In both my cases pieces of slough and very

foetid discharge continued for many days after the removal; and in spite of careful washing out, one ultimately succumbed.—*Edinburgh Medical Journal*, Oct., 1886, p. 290.

95.—ON TWO CASES OF VAGINAL EXTIRPATION FOR CANCER, WITH REMARKS ON THE OPERATION.

By JAMES BRAITHWAITE, M.D.Lond., Obstetric Physician to the Leeds General Infirmary.

It is now generally admitted that it is unnecessary, and indeed in most cases a mistake, to remove the uterus for cancer of the cervix alone. The tendency of cancer of the cervix is not to spread upwards towards the body of the uterus, but outwards through the thickness of the neck, so as to involve the cellular tissue. It is only when the disease commences near the os internum that it is likely to spread upwards beyond the cervix. This is a pathological fact of the greatest practical importance. It is now, in this country at any rate, generally agreed that it is only in cancer of the body of the organ, or in some cases commencing close to the os internum, that removal of the whole uterus is called for, or even justifiable. In cancer of the cervix not too far advanced for operation it is only necessary to divide the vagina from the cervix all round, and remove as much of the lower portion of the uterus as may be required to cut well beyond the disease. Almost any portion of the uterus short of the whole may be thus removed without opening the peritoneum. At the Leeds Infirmary we have for some time supplemented this operation by removing a further portion of uterine tissue by the use of chloride of zinc. This is followed by great contraction of the cicatrix. This "supra-vaginal amputation of the cervix" might with some justice be called "Baker's operation," as it was first described by Dr. W. H. Baker, of Harvard University, in the *American Journal of Obstetrics* of April, 1882. The mortality from this operation is very low (7·8 per cent.), and it gives equally good results as to freedom from recurrence in cases of cancer of the cervix, and when, or if, recurrence does take place it is very rarely in the stump of the uterus, but in the surrounding cellular tissue. In this paper I shall not again allude to this operation, as it concerns only cases for which it is not sufficiently radical. It is, of course, only possible to treat cancer of the body of the uterus by the removal of the whole organ, and it is now well established that this should be done by the vaginal method (kolpo-hysterectomy) whenever possible, and that what is known as Freund's operation, or removal of the uterus by abdominal section, with its mortality of 72 per cent., should be employed only in exceptional cases.

[The two cases which form the subject of this paper were both primary cancer of the body of the uterus. Both recovered well.

One has now been free from the disease over twelve months. We do not reprint from the *Lancet* the details of these cases, but pass on to the subsequent remarks.]

This operation has now, I believe, been performed over 400 times, and the records of a large proportion of these cases are accessible. Almost every conceivable variation in the details of the operation has been made. I propose, whilst giving more in detail the plan of operation followed in the two cases related, to allude to some of these variations, especially as the plan of operation recommended is not that of any one operator, but consists of what appear to me to be the best parts of all, combined so as to form a practical whole, with the addition of some points which, so far as I can ascertain, are new, but seem to me of practical importance and likely to conduce to success. The simpler the operation can be made, consistent with safety from hemorrhage, the greater will be the success, because these patients are generally in bad health from hemorrhage, and the duration of the operation is a very important factor. Next to the duration of the operation, the most important or equally important object we should have in view is to keep the peritoneum free from contamination with septic and cancerous matter from the uterus.

I notice that the leading idea of most operators has been to avoid hemorrhage. This I take to be a mistake, for the application of temporary ligatures and clamps, or pressure forceps, takes up time and is generally unnecessary. Forcible dragging of the uterus downwards arrests the circulation, as proved by the absence of hemorrhage from the uterine side of the divided broad ligaments. It is advisable to prepare the parts by removing with a curette any loose cancerous masses in the neck a few days before the operation and by the use of cleansing antiseptic injections. The patient being in the lithotomy position, and the vagina washed out with rather hot water, for the purpose of preventing hemorrhage as well as for the sake of cleanliness, in both cases I scratched with a suitable instrument the exact line of the anterior and posterior vaginal fornices. This gives the situation of the incisions, of which the anterior is important. The uterus being now pulled down into view by vulsellum forceps, the posterior incision should be made first. After an aperture is made through the vaginal wall, the left index finger is to be passed through to serve as a guide to the scissors with lateral angle, with which the division is completed on each side quite up to the bases of the broad ligaments. Whilst the scissors are used, the traction by the vulsellum should be relaxed. Now let traction be again made, and with a scalpel divide the anterior vaginal wall by a semicircular incision in the line of the anterior fornix just to reach the cellular tissue, so abundant here in front of the cervix. Let this incision be prolonged laterally to join the posterior incision at each side, but here the

depth of the incision must not be more than one-sixth of an inch, and exactly five-sixteenths of an inch from the cervix.

The next step is to separate the bladder from the uterus, and, being warned by the experience of the first case, in the second I did not use the finger for the purpose of tearing through the cellular tissue. The finger, although sensitive, does not give the nicety required. There can be no better instrument for the purpose than an ordinary uterine scarifier a little blunted. The small flat blade of this partly cuts and partly tears through the cellular tissue without throwing any strain on the bladder, the walls of which are very tender, being weakened by their separation from the uterus. When the finger is in the anterior wound and a catheter is introduced into the bladder, it will be felt how very thin the bladder wall is. When the peritoneum is reached, it is at once opened by the scarifier, or scratched through by the finger-nail, and the wound is then to be widened with the scarifier from side to side, until a finger in the anterior wound will meet a finger in the posterior wound at each side of the uterus, the broad ligaments only intervening. This is important on account of afterwards ligating the broad ligaments, and it cannot be done unless the posterior wound is made first.

When the anterior wound was made the peritoneum was opened, but when the posterior wound was made in both cases it was left intact, thereby preventing access of blood, cancerous or septic matters. This is a point of the greatest consequence. Before it is opened (which must now be done), the parts must be washed clear of everything. It may be inferred from most accounts of operations that this has not been thought of, but some operators have with the same object made the posterior wound last. The plan I have indicated, however, answers the end required better, for in making the anterior wound, which is a matter of delicacy, it is an advantage to be able to insert a finger into the posterior wound, especially in order to gauge the proper width of the anterior wound, and to steady the parts whilst it is made. The peritoneum is quite loose over the roof of the vagina posteriorly, so that it is actually difficult to open it as it yields before the finger.

Nearly all operators now either bring down the fundus through the posterior wound or through the anterior one. The former plan is obviously the best, because there is more room posteriorly; but I believe both plans are bad, because the cervix is pushed up as the fundus comes down, and by this somersault the cervix with its hurtful discharges has the chance of infecting the peritoneum. To avoid this, Mr. Greig Smith, of Bristol, who reports a case in the *Lancet* of Jan. 1st of this year, even passed a sponge into the peritoneal cavity. The plan of removing the uterus cervix first avoids all risk to the peritoneum. It is the plan followed by Billroth and Martin, but the former ligates the ligaments by mass ligatures—a

more difficult and tedious and less secure way than that of ligating them in segments. The plan of bringing the uterus entirely outside adopted in my first case has the advantage of exposing everything fully to view, whilst equally with the plan of removing the uterus cervix first, directly downwards, it avoids the risk of septic infection of the peritoneum. It can only be done when the broad ligaments are elastic and free from any trace of past cellulitis, and when the uterus is not much enlarged. It is not mentioned by any writer on this subject as possible, nor in any account of operations which I have seen is it mentioned, except that Staude has published some cases in which, without the anterior wound being made at all, the fundus was retroverted through the posterior one, the cervix being thus not anteverted, as usual, and then, lastly, the anterior wound was made.

In order to avoid injury to the ureters, their exact distance from the cervix must be borne in mind. This is the merest fraction under half an inch. They are nearest the cervix, quite at the lowest part of the broad ligaments, and higher up three-quarters of an inch from the side of the uterus. This space is very small. It can be made a trifle larger by firmly grasping the broad ligament between the finger and thumb, when the ureter, being of firmer structure than the surrounding parts, escapes or is squeezed outwards a little. But we have to cut our coat according to the cloth, and it is absolutely necessary for the lowest ligature to be not further from the cervix than five-sixteenths of an inch. The uterus being now removed, we must sponge out the vagina and get an idea of the position and appearance of the wound. The left index is to be passed in to pull down the peritoneum anteriorly and posteriorly. The anterior is most important. With an Emmet's long needle-holder, and one of his needles, which, however, should be made an inch and a quarter in length, and curved slightly (to be had of Mayer and Meltzer, Bond Street, Leeds), a strong catgut suture is to be passed through the edge of the vaginal wall on the extreme right of the wound: then in order through the posterior flap of peritoneum, through two pieces of broad ligament stump (at opposite edges, so that they may not lie superimposed in the wound), through the anterior flap of peritoneum, and lastly through the anterior vaginal wall. These sutures should pass through the stumps at the further side of the constricting silk ligatures, so that when the wound is closed the latter are extra-peritoneal. Two similar catgut sutures at each side of the supra-vaginal wound are sufficient to bring it together and to fasten the pedicles in the wound. A drainage-tube should be placed centrally, and fixed to the posterior vaginal wall low down by a suture. It can easily be removed by cutting this suture, without any disturbance or exposure of the wound. The ends of the catgut sutures which bring together the supra-vaginal wound should be cut short, but those of

the silk constricting ligatures on the stumps should be left an inch and a half long and lying loosely in the vagina. These will come away in about a fortnight. The vagina, and especially the wound, should now be dusted lightly with iodoform, and the vagina plugged loosely with iodoform gauze. The drainage-tube should be cut off so that the end is well within the vagina, lest air should enter the peritoneum. The end of the tube is to be packed round with absorbent wool. One advantage of leaving the silk ligatures on the pedicles so long is that in the event of secondary hemorrhage the end of each pedicle could be examined separately by sight, and any bleeding vessel taken up.

Much attention has been given by writers on this operation to the two questions of whether the peritoneum should be included in the sutures closing the vaginal wound, and whether a drainage-tube should be used. A conclusion on these points can hardly be helped by elaborate statistics, for our knowledge of peritoneal wounds is quite sufficient from other sources to teach us that the peritoneum flaps should be brought down and included in the wound; but the result of statistics proves this almost foregone conclusion. There are other ways of doing this, as by using a continuous suture, which is said to be more quickly done, but I think this would seal up the parts rather too firmly. A little capillary exudation should be allowed.

There have been many modifications of the operation, which seem to me should be condemned. Such as the use of mass ligatures either as temporary or permanent means of arresting hemorrhage from the broad ligament, relying upon pressure forceps instead of ligatures for the same purpose, the use of elastic ligatures, putting ligatures on the broad ligaments with the uterus *in situ*, unnecessary ligating the vaginal roof before incising it, and especially leaving the vaginal and peritoneal wounds unclosed. On the other hand, the plan of bisecting the uterus and removing one half first, which has been followed by Müller of Vienna, Zweifel, and by Alexander Simpson, of Edinburgh, is a modification worth bearing in mind.

In conclusion, my object in this paper has been to try to work out the minute details of this operation, choosing from the various plans which have been previously followed those parts of each which seem most likely to conduce to success. It seems not improbable that the mortality may be considerably reduced. If it is properly done, there seems to me very little for the patient to die from, for the peritoneum can be guarded from sepsis by the methods I have indicated, and hemorrhage can also be with great certainty prevented. Moreover, if the pedicles are treated extra-peritoneally and peritoneal surfaces everywhere lie together in the wound, it will be shut off almost at once from the general peritoneal cavity. By far the greatest number of these operations have

been done on the Continent, and especially in Germany; but this arises from their being done unnecessarily, when supra-vaginal amputation would have given equal security with much less risk. For instance, out of nineteen cases of Fritsch's, sixteen were cancer of the cervix and only three of cancer of the cervix with enlargement of the body. The same proportion holds good with most German operators. In this country the operation has been performed comparatively seldom; but it has been generally confined to suitable cases—viz., cancer of the body or of the neck at its upper part. In Yorkshire it has, I believe, only been done four times, and the two cases related were the only successful ones; but I say this open to correction.—*Lancet*, July 23, 1887, p. 162.

96.—ON THE TREATMENT OF FIBROID TUMOURS OF THE UTERUS BY ELECTRICITY.

By Dr. G. APOSTOLI, Paris.

[The following paper, which we produce nearly entire, is from a translation by Dr. Wm. Woodham Webb. It was read at the meeting of the British Medical Association at Dublin, in August, 1887, and the Editor had the advantage of seeing Dr. Apostoli's demonstration upon an actual case at the Rotunda Hospital.]

The surgical measures proposed, discussed and put in practice for the removal of uterine tumours have of late years occupied a great share of the attention of practitioners, and yet many of the questions connected with this subject still remain undecided, obscure, and perplexing. After all, the dangers of excision are not much less formidable. For this reason I have endeavoured to find out a way, neither strictly surgical nor strictly medical, of dealing with these cases, by which I might avoid equally the reproach of surgical insecurity and the defect of therapeutical inefficiency. By this I mean my electrical treatment of uterine fibroids. It is now five years since I adopted a proceeding which I may define as a galvano-chemical cauterization of the uterus, vaginal, intra-uterine or parenchymatous, and always monopolar.

[It will facilitate the understanding of Dr. Apostoli's method of treatment, if we say that, the patient being in the lithotomy position, a piece of good plastic clay, about 10 inches by 5, is then placed upon the abdominal parietes, and in this is embedded a flat metal plate, about 5 inches by 3, to which metal plate one of the ends from the battery is attached. A platinum sound, sharp-pointed, is then introduced into the uterus per vaginam and made to penetrate the tumour to a slight depth. The current can now be passed between the metal plate viâ the clay on the body, and the platinum sound or needle in the uterus. The strength of the current is accurately gauged by an electrometer, which measures up to 250 milliampères (maker—as of all the instruments used—

Gaiffe, Paris.). The current can of course be directed from the uterus to the skin of the abdomen (positive), or the reverse (negative); but in either case there is no effect on the abdominal wall owing to the large surface of the clay electrode, the only other electrode being the one in the uterus. Whether this is at the will of the operator positive or negative, is of considerable consequence, as will be seen by Dr. Apostoli's remarks on this part of the subject. This plan of using electricity therefore differs from that of any previous operator in various ways, but principally in that only one pole is active. Dr. Apostoli points out that his predecessors in the electrical cure of fibromas have employed the current in a vague and uncertain manner, without dosage by means of a galvanometer, in insufficient amount, and often in a dangerous manner, the galvano-puncture being made above the pubes and through the abdominal integuments. He then continues:]

I have supplanted the old way of operating by a method which is:

1. *Precise*, by the introduction of *new galvanometers* of intensity—exact counters and measurers of the electric current. It is in this way only that we can estimate the value of the fluid passed and utilised through the uterine tissues.

2. *Energetic*, by an absolutely novel service of *high* intensities of current, which I have progressively carried, according to the necessities of my cases, from 50 to 150 and 250 milliamperes.

3. *Tolerable*, in spite of the enormity of these doses, in consequence of the introduction of a new form of electrode, the wetted clay, which renders the cutaneous pole innocuous and permits us to transmit through it easily and without injury a current of signal medical intensity.

4. *Better localized*, by a direct application of the active pole, by way of the vagina, to the uterus, either in its cavity, or in the substance of the fibroid deposit.

5. *Thoroughly under control*, by the exclusive choice of the unipolar method. In fact, I apply to the diseased uterus a *continuous galvanic current of an intensity and duration sufficient to produce the therapeutic effect required*. Now this application, which is generally inaccurately described as electrolytic, ought to be defined as a *galvano-chemical cauterization*, that is to say, a cauterization purely chemical. In the course of this current through the tissues there are two successive and distinct effects developed: (a) The *tangible* effect, at the points of entry and exit of the current, which according to the dose and duration, will be a chemical cauterization more or less severe (but not thermic), variable in conformity with the pole, and different in its character at the *positive* pole and at the *negative* pole. This polar action, at the will of the operator, may be either *monopolar* or *bipolar*. (b) The effect resulting from the circulation of the current from one pole to the other, which is therefore called *interpolar* action. This action follows every

electrical application and sets up a subsequent process of disintegration, proportionally wide and lasting, of the morbid products through which it is made to pass.

In serving myself to the utmost of the polar and interpolar effects of the electric current for the treatment of fibromes, I adopt always a galvano-caustic, intra-uterine and *monopolar*. I thus only use directly one active pole, closing the circuit outside the abdomen by a second pole, made as nearly as possible inert. At the same time, I reckon upon the interpolar effects of the current, as it necessarily finds its way through the entire uterine substance, from the internal pole to the external or cutaneous pole. This, as I have explained elsewhere, is the principal reason why I do not place the two poles in the vagina, and why I advocate the method known as uterine monopolar.

6. *More scientifically exact*; from the due appreciation of the topical effects of the two poles, and the precise chemical and anatomical indications peculiar to each of them.

I have been able to demonstrate, in the clearest manner, that we have in our hands a double-edged agent, that we can make use of at discretion, to afford us local effects quite different. On the one side, is an *hæmostatic* more or less rapid in its action, and either direct and immediate, or secondary and remote. I allude to the *positive* pole, with which we can arrest hemorrhage, either instantly, if the cavity of the uterus be of normal dimensions, if the action be relatively intense, and if the hemorrhage be not excessive; or more deliberately and gradually, after several successive operations, by the formation of contractile cicatrices. The various gradations of the narrowing of the uterine canal are the plain evidence of this secondary and prolonged effect of positive cauterizations.

The *positive* pole will therefore be the "*medicament par excellence*" in cases of bleeding or *hemorrhagic* fibromes.

On the other hand, with the *negative* pole we obtain a state of *temporary congestion*, without *direct* hæmostatic effect. The interstitial circulation of the uterus, thus momentarily stimulated, will be hurried on, and a regression of the non-hemorrhagic fibromes is the consequence, either of this state of congestion, or of the supplementary artificial and salutary hemorrhages which take place. The negative pole will therefore be found to render invaluable benefit (though with the positive pole it is possible to arrive at the same point by a way more indirect and tedious), in those cases of fibroids accompanied with *amenorrhœa* and *dysmenorrhœa*, which are only too often the despair both of patients and doctors without such means at command.

Looking therefore at the difficulties and dangers of abdominal surgery, and at the avowed impotency of the greater part of medication in cases of fibromes, I do not hesitate to assert for my method of treating them a precedence on the following grounds:

1. It is *easy* of application; since it only requires an elementary acquaintance with the principles and practice of electro-therapeutics; it being, however, unconditionally understood that a profound knowledge of gynæcological science must be the indispensable prelude to any attempts.

2. It is *simple*; for it is ordinarily nothing more than a skilful, uterine, therapeutical soundage. This is only what may be expected of every surgeon provided with a good galvanometer of intensity, some sort of battery capable of yielding an adequate current of electricity, an inoffensive cutaneous electrode in wet potter's earth, an inattackable intra-uterine electrode in platinum, and a steel trocar for the galvano-punctures.

3. The current is mathematically *dosable*; so that every operator can carry on the treatment under the same conditions, and adjust the force of his remedy to the nature of the effects he has to obtain.

4. The *seat of operation is optional*; for the surgeon has the power of limiting and defining the point of entrance of the current, making it either the mucous membrane or the tissue of the organ.

5. It is of *easy control*; and only utilises an amount of force, which should cause neither shock nor suffering, and ought never to be put to use but in progressive and adjusted doses.

6. It is *antiseptic* in itself, by virtue of the high cauterization of the active pole.

7. It is for the most part *easily supported*; anæsthetics being only required for certain cases of galvano-puncture.

8. It does not *impose upon the patients any forced seclusion*; and mostly admits of their continuing the usual habits of life, and even of doing hard work, in the intervals between the operations.

9. But over and above all these considerations, there is one dominant point to be advanced, which alone is of weight enough to turn the scale in favour of the electrical treatment. The simple chemical cauterization, for which you may find the equivalent in the laboratory of the chemist, or in the actual cautery, is not the only matter we have to take account of. This chemical cauterization—so called polar—is only the first part of the therapeutical scene which gradually unfolds itself.

The electrical current—the power we wield, and the accompaniment of every vital manifestation, in its course through the tissues acts prolongedly and profoundly on every molecule, and thus causes ulterior changes in the tumour structure, which may well astonish both by their extent, safety, and certainty.

I regret that I cannot do more on this occasion than roughly outline these questions of prime interest, and I turn at once to the clinical and purely practical results of my treatment.

With this powerful agent, the constant galvanic current of high intensity, of which I have pointed out the tractableness as well as its many advantages, in our hands, let us ask what can it do, and

what ought we to be able to do with it, for the relief of the uterine fibroid?

Symptomatically, the fibroids may be divided into two great classes, those which are hemorrhagic and those which are not so.

The positive pole is the express remedy for the cases attended with *hemorrhage*, the negative pole when they are *not hemorrhagic*. Each of the two poles, conveying the current, acts in the first instance locally on that part of the mucous membrane with which it is in contact—the negative pole as producing congestion, the positive pole as hæmostatic. Moreover, if they both in their secondary interstitial action induce a regression of the tumour, I believe that in this respect the greater potency belongs to the negative pole. But beyond this the negative pole has a further faculty. If we make it enter by puncture into the substance of the fibroid deposit, it will more rapidly insure the diminution of the tumour, and what is truly remarkable is, that this negative pole, naturally congestioning and little if at all hæmostatic, becomes by a sort of *contre-coup* markedly hæmostatic, and will at the end of a certain time, arrest even troublesome hemorrhages. This staunching effect is due to the cutting off of the supplementary circulation, by the rapid atrophy brought about by the action of the negative current.

As a supplement to the rule which I have just formulated,—pole positive intra-uterine for the restraining of hemorrhage, pole negative intra-uterine for tumours without hemorrhage—comes the second indication for *galvano-punctures*. These punctures, as my experience increases, assume daily a more and more preponderating importance in my estimation.

The indications for galvano-puncture are *two-fold*; first, as a matter of *necessity* in consequence of uterine atresia, or where there is such displacement of the organ as to prevent any introduction of a sound; second, by *preference* when we see that we can advantageously combine punctures with intra-uterine cauterization, so as to expedite and make sure of the effects that, with the cauterizations only, we should tardily or perhaps imperfectly realize. We must therefore undertake the galvano-punctures *alone* whenever the case will fairly admit of them, or use them in other cases as *adjuncts* to the intra-uterine cauterizations previously tried.

The manipulations in the operation of galvano-puncture will always be more difficult and even dangerous in incautious hands. I cannot therefore too much insist upon a rigid observance of the directions and precautions I have elsewhere given at length. I can now only offer a very short summary of them:—

1. Absolute and regular *antiseptic* irrigation of the vagina, before and after each operation.

2. Use as the puncturing instrument a small steel trocar or needle, and let the punctures be *shallow*, that is, not deeper than from 1 to 2 centimetres.

3. Make the punctures on the most prominent part of the fibroid ; whenever possible, in the posterior cul-de-sac.

4. Make the punctures *without speculum*. Slide the trocar through the celluloid sheath which protects the vagina, after having examined and chosen by touch the point where the puncture is to be made.

5. Take the precaution of *ascertaining the seat of any pulsation* so as to avoid wounding an important vessel.

6. In case of any unusual hemorrhage, immediately *dilate the vagina* with an expanding speculum, and if necessary put on pressure forceps to the bleeding point.

Such is a rapid sketch of the directions for operation ; what now are the anatomical and clinical results to be expected ?

A. As regards the *material* changes we may affirm, that every fibroid tumour, submitted to this treatment, sometimes after so short a time as one month, but certainly when the treatment is fully carried out, will undergo a manifest reduction appreciable by the touch, and demonstrable by internal measurement. The further diminution of the tumour which continues for some months, varying in amount from a fifth to one-half of the original volume, is generally associated with a coincident and equal accumulation of subcutaneous adipose tissue on the abdominal walls.

The regression of the tumour is not only apparent during the time of active treatment, but goes on continuously after it has been suspended, and is the persistent proof of the enduring influence of the electrical operations.

The liberation of the tumour from its local attachments takes place simultaneously with its decrease of bulk. The tumour which at the commencement of the treatment was immovable, can progressively be made more and more to change its position, as the absorption of the enveloping tissues, deposited round it, advances.

Another phenomenon is observed in connection with the regression of the tumour. It not only contracts on itself, but it shows a tendency to separate itself from the uterus, to become more distinctly subperitoneal, to detach its mass as it were from its setting in the uterine wall, and to remodel itself into a pedunculated form.

B. *Clinically*.—The results are not less striking. Perhaps they are even more so, as they are not only matter of proof by the examination of the surgeon, but the patient herself is the living exhibition of them. We may generalise the extent and importance of these results by saying, that ninety-five times out of one hundred, they comprise the suppression of all the miseries constituting the fibroidal symptomatology, which may be thus categorically enumerated :—Hemorrhages, the troubles of menstruation, dysmenorrhœa, amenorrhœa, nervous disturbances, the direct pains in the growth itself, and from mechanical pressure, and the harassing series of reflex actions.

In a word, the assertion may be safely advanced that, though our therapeutical resources only carry us so far as the sensible reduction of fibroid tumours, and not to their total absorption, we may, with regard to the symptoms, certainly anticipate their complete removal, and the establishment of a state of health equivalent to a true resurrection. I am justified in saying, that the greater part of women who have persisted in the necessary treatment, not only were cured but remain well.

I use the expression, the *greater part*, because there is no such thing as human infallibility, especially in medicine. I acknowledge having been sometimes unsuccessful, and so instructive are my failures, that I shall recount them at length in a work now preparing. It will be seen that they were cases in which there was no possibility of satisfactory treatment, owing to an apparently absolute intolerance of high intensities of current. I see now that I was wrong in retreating before this supposed intolerance. Among them, were three cases of fibrome with ascites, and I regret now that, with the aid of anæsthetics, I did not persist in going to the limit of my power. I have also met with the same intolerance in some hysterical subjects, in cases of very irritable uterus, and in others of peri-uterine and intestinal phlegmasia. Now, with my present experience, I should not hesitate to operate to the fullest extent with the patient under chloroform. There remains yet the obscure question as to the class of cystic fibromes, and tumours with a tendency to malignant degeneration, where there is often an accompanying fearful and irrepressible hydrorrhœa. I have recorded three such instances, and in them intra-uterine galvano-cauterization generally proves useless. Something more is demanded, and we must seek in galvano-punctures means of denutritive action more powerful and more efficacious.

Finally, I may lay down the following proposition. No operator should admit the failure of intra-uterine galvano-cauterization, before having had recourse to the galvano-punctures, *which he must enforce either with or without anæsthetics*.

[The writer then gives an account of the actual diseases in which he has employed galvano-cauterizations, and we note that these embrace various other affections besides fibromas. Dividing the number of applications by the number of patients, we find that the average number of applications per patient was thirteen. He then observes:]

I have to confess to having either excited or aggravated, in the course of the five years, ten peri-uterine phlegmonous inflammations. These must be attributed to blunders in carrying out the treatment, as will be shown when the account is published at length. But these errors of practice happened during the early days of my work, and were either: (a) Negligence of antiseptic measures, which were either omitted altogether or done imperfectly; or, (b) The

too violent, or too intense, use of the negative pole, in cases of subacute peri-uterine inflammations.

The fact is, that the negative pole, having a strong power of producing congestion, is a dangerous weapon, which at the beginning of any treatment must be brought to bear with great prudence and reserve, if one would avoid overshooting the mark for which it is intended. To lay before you the facts of these accidents will serve the double purpose of warning you of what may befall you, and of preventing you from falling into similar errors. My caution is, that whenever the negative pole is put to use, and there is any trace of peri-uterine inflammation present, you must not only redouble your antiseptic heedfulness, but your operative proceedings must be carried on with deliberate carefulness. You must feel your way, testing the susceptibility you have to work upon by two or three preliminary operations, in which you give doses so feeble that they only serve to enlighten you, and to habituate the patient, so as to lead on safely to the use of higher intensities.

But when I tell you that this operative gynæcology, as I have to practise it, is carried on in such exceptional circumstances that no one else has ventured to encounter them, and upon a class of women who are obliged to walk home shortly after they get up from the couch, who seldom take the necessary rest in bed, who are in no way under my surveillance, and whose poverty forces them in some fashion to get through all the ordinary duties of life, you will be curious to know, and you will ask of me, what is the explanation of this illusive mystery. All that I can say is,—it appears to me that the intra-uterine current, at the high proportions I trust to, seems to have in itself some special antiseptic and atrophic property.

Among the patients who had not the will to let me finish what I had begun, and whose impatience led them voluntarily to seek the removal of their tumours by excision, seven put themselves into the hands of six of our most eminent surgeons, and not one of the seven recovered from the operation. Commentary on this would be superfluous.—*Dr. Apostoli on the Treatment of Fibroid Tumours of the Uterus by Electricity, translated by Dr. Wm. Woodham Webb, pp. 1-15.*

97.—ON ELECTROLYSIS IN GYNÆCOLOGY.

By THOMAS SAVAGE, M.D., M.R.C.P., F.R.C.S., Surgeon to the Birmingham Hospital for Women.

Having recently had an opportunity of paying two visits to the clinique of Dr. G. Apostoli in Paris, where he practices the treatment of certain diseases of women by electrolysis, I have thought it might be useful to detail to the readers of the *Lancet* some of the observations I made. There were each day between thirty

and forty patients, all of whom came to be treated by electricity for some form of special ailment. Apostoli used simple faradisation to a considerable extent, simply as a means for the relief of pain—e.g., vaginismus, ovarian and uterine pains, proceeding from various causes. He appeared to regard it that the patients, being in pain, came to have it relieved, and that if the frequent application of faradisation gave the desired relief it was sufficient, leaving the disorder itself to take its own course. Some of these cases which I saw were prolapsed ovary, small cystoma (?), adherent organs, the result of chronic inflammatory mischief, hysteria, &c. The application certainly has an anodyne effect, as evidenced by the presence and absence of tenderness on pressure, &c., before and after its performance. It appeared, also, in some instances to have a soporific effect. I take it, however, that this is only the resuscitation of a method of treatment that has been long known and practised.

The *galvano-caustique chimique* is, however, the essential element in Apostoli's special work. The clinical history and treatment of a number of cases were read to me, and I was shown the plaster models of some of the abdominal tumours, and certainly the condition of the patient in every instance had considerably improved. In cases of uterine myoma, a dozen or more of which I saw and examined, the hemorrhage had ceased, the tumour had diminished, pressure symptoms had subsided, and the patients expressed themselves as being very decidedly ameliorated. Dr. Apostoli uses the positive pole (acid), which is caustic and therefore astringent, for cauterisation to the interior of the uterus for endometritis, subinvolution, and bleeding myoma; and the clinical notes in the latter class showed that the loss had been arrested after three or four cauterizations. The applications are made at intervals of two or three days, sometimes longer, and amount to a dozen or more altogether. The electrode remains in utero about five minutes at each sitting, and does not generally give rise to much pain. There appears to be an entire absence of danger in this, as also in the negative electrode.

The negative pole (alkaline and destructive), which has the effect of causing a flow of blood and destruction of tissue, was used for myoma by way of puncture into the mass of the tumour, causing diminution of size and amelioration of the pressure symptoms. The puncture was made with a steel rod, protected in the vagina by a celluloid sheath, having a naked point of about 2 centimetres. This is allowed to remain in the tumour for five minutes, and is repeated from time to time as considered necessary. Formerly punctures were made of 6 or 7 centimetres. The patient has an anæsthetic if thought desirable, and rests in bed afterwards for an hour or two. No bleeding of importance has been noticed as a result of the puncture; when it has occurred, it has hitherto

always been arrested by putting the vaginal wall on the stretch by means of a plug or the speculum. For the positive cauterisation a platinum intra-uterine sound is usually employed.

The galvano-caustic (negative) is sometimes used in cases of old, never acute, perimetritic inflammation, acting, as is supposed, as a derivative. It is never used for the arrest of hemorrhage. Most of the cases of pelvic peritonitis that I saw were on the right side, and I was struck by the absence of badly ruptured perineum and cervix, where the symptoms were old inflammations of post-puerperal origin. I saw negative puncture applied in a case described as "subacute perimetritis," which, on examination, showed a mass of exudation and tumour round the uterus. I saw a case of mucous polypus of the cervix, which Dr. Apostoli was going to treat with the negative application. He preferred this plan to the usual one of excision or ordinary caustics, as the electrolytic application would not only burn away the polypus, but also so alter the character of the mucous membrane of the cervical canal as to prevent a recurrence. The intensity of the action is regulated by a galvanometer, which measures up to 250 milliamperes. Action is usually allowed from 100 to 150—more often the latter. Platinum is considered too soft for the negative puncture, and the steel rod which is employed is either simply pointed like a packing-needle, or spear-shaped. The steel point, after use, does not appear to be at all acted upon by the alkali, nor did it show any trace of blood on its withdrawal.

With every patient the dorsal position is adopted. The hands are washed in sublimate solution before examination, and the vagina is carefully irrigated with the same. All the instruments are kept in a porcelain dish containing antiseptic fluid. The abdomen is covered with a large piece of wet clay in which the opposite conductor is embedded—negative for cauterisation; positive for puncture. This is kept, by an assistant, closely applied to the abdominal wall, and ensures safety to the skin, which is always quite cool during and after the operation. The vaginal irrigation is repeated after withdrawal of the conductor, and the canal is packed with strips of iodoform gauze, changed from day to day if necessary. One patient presented herself (a first visit) with what was considered a small ovarian cystoma; and Dr. Apostoli said that he should apply galvano-puncture (negative) to it. It appeared to me that it would be extremely difficult so to fix it as to ensure accurate puncture, and I asked the question whether it might be desirable or justifiable for the tumour to be fixed from above by the fingers, through a small abdominal incision in order to facilitate the application of the negative needle per vaginam—a sort of combined operation. I was, however, forced to the conclusion that if a small incision were once made through the abdominal wall, the easiest and surest way of curing the

patient would be there and then to remove the tumour. Dr. Apostoli is aided in his work by two admirable assistants and a most intelligent nurse.

It would obviously be impossible from an observation of two short visits to give an opinion of real value as to the merits of Dr. Apostoli's treatment. I was induced to pay my visits from a desire to learn for myself the details of applying the electrolysis, especially to cases of uterine myoma. I have long felt that we want some means other than those which we possess for the treatment of many cases of fibroid tumours of the uterus. Hysterectomy, grand and perfect when successful, has even now a larger mortality than is desirable, and can be practised only as a last resort. Will electrolysis ever be able to be a substitute for the more heroic treatment? It is our duty to answer this question if possible. With this state of mind, therefore, I am prepared to try the effects of Apostoli's method, and hope to be able to communicate in due course the results of such experience.

With my present views I thought that some of the cases I saw could have been cured by abdominal section, and on telling this to Dr. Apostoli and Dr. Woodham Webb, they both seemed to imply in their answers that when I knew more of what electrolysis could accomplish, I should be as enthusiastic in favour of it as themselves, and should substitute it for many cases now calling for abdominal section. The battery and all necessary appliances can be obtained of M. Gaiffe, 40, Rue St. André-des-Arts, Paris, at a cost including freight, &c., of about £25. I have much pleasure in testifying to the extreme courtesy of Dr. Apostoli, who allowed me to see for myself everything connected with his work, and explained most fully every detail. I had the pleasure also of meeting Dr. Woodham Webb, who most kindly assisted me by explaining what appeared difficult.—*Lancet*, July 23, 1887, p. 158.

98.—ON THE TREATMENT OF FIBROID TUMOURS OF THE UTERUS BY ELECTROLYSIS.

By W. E. STEAVENSON, M.D., M.R.C.P., in charge of Electrical Department of St. Bartholomew's Hospital, London.

The treatment of fibroid tumours of the uterus by electrolysis has been brought prominently before the profession by Dr. Apostoli's paper, which was read at the recent meeting of the British Medical Association at Dublin. The attempt to influence fibroid tumours of the uterus by electricity is not new. It was tried by Cutter, of New York, in 1878, by Althaus, by Freeman, by Beard and Rockwell, and by numerous other medical men, chiefly in America and on the Continent. It has not until recently received much support in this country. As long ago as 1883 I had electrodes made for the purpose of intra-uterine electrolysis, of

which illustrations are here given, and which I exhibited at Dublin during the discussion on Dr. Apostoli's paper. It has been very difficult to persuade those engaged in gynæcological practice to send me cases of fibroid tumours on which to try the treatment, but since Dr. Apostoli's method has been made public and has caught the ear of the profession, that difficulty has been removed, and I have had several cases during the last few months. It is due to Dr. Apostoli to say that he has by indefatigable work and perseverance brought this method of treatment to a degree of perfection it has not attained before, and caused it to be recognised as one of the established modes of treatment of uterine fibroids. Beyond this Dr. Apostoli has, by a simple and ingenious contrivance, demonstrated and made it possible to use currents of greater strength than were ever before supposed to be tolerable; and by the use of a galvanometer has been able to register the strength of these currents, and has also formed some opinion as to what is the most advantageous strength to employ. It is impossible to compare the results obtained by Dr. Apostoli with those of earlier operators, because the latter never recorded the strength of the currents they used, nor were sufficiently exact to employ a galvanometer with which to gauge them. It is very possible that no galvanometer, suitable for medical purposes, graduated in milli-amperes then existed, but it is perfectly certain that the current strengths now used by Apostoli are far greater than those formerly employed, except when needles attached to both poles were thrust into the tumours. It is due also to Apostoli to acknowledge that he has been able to formulate some rules which should be followed, as to the pole and form of electrode which it is preferable to employ.

Dr. Apostoli's internal electrode consists of a rod of platinum twelve inches long, of the thickness of an ordinary uterine sound, rounded as a probe at one end and pointed at the other. This platinum rod can be fastened into a handle by a screw-swivel on its side, so that either end of the rod can be passed into the handle and secured there when the other end is wanted for use. A certain length only of the platinum is required to be bare so as to act within the uterus, the other part of the long rod is covered by a celluloid or vulcanite tube, which acts as a sheath and protects the vagina and other soft parts from the action of the current. The rod is very rigid, and from the large amount of platinum used in its composition the instrument becomes rather expensive.

I think the electrodes I have used have these advantages over Dr. Apostoli's: they are much more flexible; they consist of a copper wire, insulated by gum elastic, to the end of which is welded a piece of platinum of about an inch in length, and of the size of a No. 6 English catheter (Fig. 1). The expense is very

much less, on account of the smaller amount of platinum used in their composition. The flexibility is an advantage, as it enables them to be passed into the uterine cavity through the cervical canal in many cases when it would be impossible to do so with the rigid electrode used by Dr. Apostoli. When a fibroid tumour is present the uterus is often tilted in one direction or another, so that the opening and course of the cervical canal are very much displaced from their normal position. And, again, with the celluloid or vulcanite sheath used by Dr. Apostoli, it is almost impossible to shield that part of the platinum rod which is in contact with the cervical canal and os uteri. With the electrodes I use it is quite easy to get the unprotected end of the platinum well within the uterine cavity, the gum elastic part of the stem only being in the cervical canal. One of my electrodes is used with a handle, having a binding screw on its side to which the rheophore is attached; and another has a Brodie's handle, like a catheter, with a binding screw at the end.

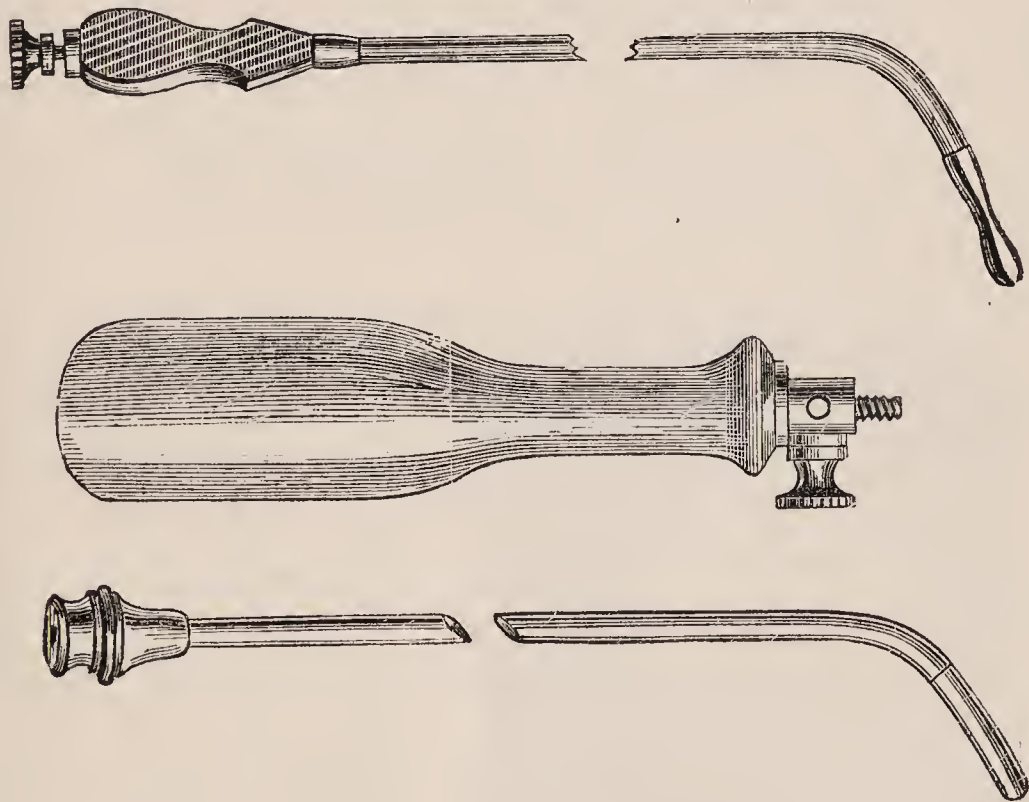


Fig. 1.

As the result of experience, it appears that Dr. Apostoli uses the negative pole for intra-uterine electrolysis much more frequently than when he first began this mode of treatment; and this is what I should have expected. Until Dr. Apostoli's work was made known, I had always used the negative pole for intra-uterine application; and under those circumstances an electrode made of platinum was not necessary, as the negative pole has no disintegrating action upon metal. Dr. Apostoli now uses a steel trocar

when he finds it necessary to puncture the tumour. When the positive pole is used, the electrode must be made of platinum, as all other metals are more easily oxidised, and are decomposed by the action of the current. This would often cause them to adhere to the electrolysed tissue, and their forcible removal might cause hemorrhage. The positive pole is generally used in soft, bleeding fibromata on account of its hæmostatic action; therefore, if the electrode were not composed of platinum, the object wished for might not be obtained, but, on the contrary, a risk might be incurred of making matters worse. The negative pole is used for dense, hard fibroids when the patient suffers from dysmenorrhœa, amenorrhœa, and pressure and "bearing down" troubles resulting from the size and weight of the tumour.

If possible the electrode for internal application should be passed through the cervical canal. In many cases the os and cervical canal are changed in position from the size and pressure of the tumour, but every manœuvre should be practised by which a sound can be passed into the uterus rather than have recourse to galvanopuncture. The os can sometimes be pulled down by a hook, or pressure by an assistant on the tumour through the abdominal wall may so tilt the uterus that an electrode can be passed into the canal. The use of my more flexible electrodes is here a great advantage. With the finger in the vagina, the end of the electrode when it reaches the os can very often be turned so that it enters the aperture.

The galvanometer I have most frequently used in the treatment

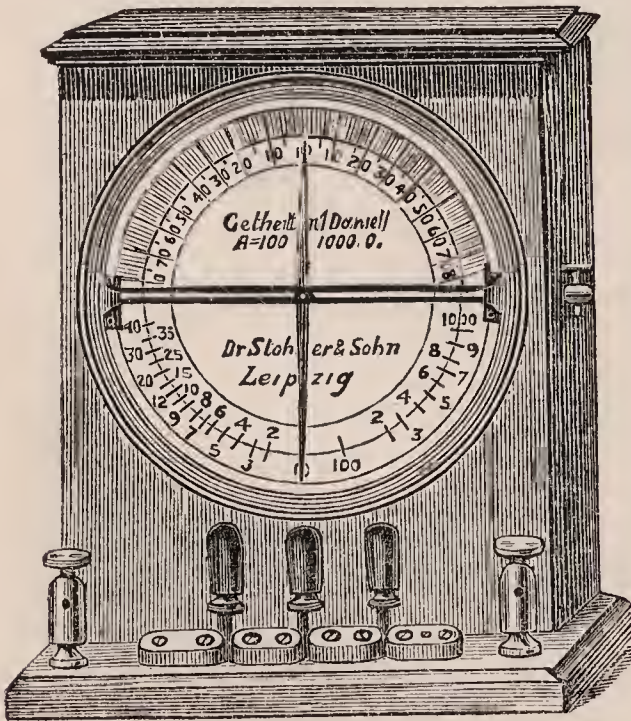


Fig. 2.

of uterine fibroids is one manufactured by Dr. Stöhrer, of Dresden (Fig. 2). Weak and strong currents can by this instrument be easily gauged. By lifting the right-hand stop the lower point of the needle swings to the left, and will register up to 40 milliamperes; and by lifting the left-hand stop the needle will swing to the right and register a current strength up to 1,000 milliamperes (or one ampère). The current strength to be used will depend upon what the patient can bear, and with the external electrode of

pottery's clay, as introduced by Dr. Apostoli, much stronger currents

can be borne now than was formerly the case. The potters' clay electrode is not all that could be wished. Its preparation is tedious and messy work; and, although the patient's abdomen is protected by net or tarlatan, a good deal of the moist clay oozes through the meshes and adheres to the patient, and with the greatest precaution and care the clothes also get smeared in various places.

Dr. Martin, of Chicago, has devised an electrode composed of animal membrane, which is stretched over a circular disc of metal, large enough to cover the whole abdomen; between the membrane and the metal plate is a quantity of salt water, which is introduced through a perforated handle fixed to the upper surface of the metal plate, and to which is also attached the rheophore leading from the battery. This form of electrode is not very adaptable to prominent and nodular tumours, and does not in such cases answer so well as Dr. Apostoli's device. A good broad-surface electrode, free from the objections I have alluded to, is a great desideratum.

The current strength to be used varies from 70 to 100 milliamperes at the first application, up to 200 or 250. The Americans are said to have obtained much stronger currents (500 to 1,000 milliamperes) without any injury to the patients. Some patients can bear much stronger currents than others, but usually their endurance increases with the number of applications. If the skin on the surface of the abdomen covered by the external electrode is not perfectly sound, the current cannot be borne so strong, for great pain is produced wherever the cuticle is not perfect, such as over a scratch or an acne spot. These places should be covered with some oil silk or plaster before the external electrode is applied.

The application of electrolysis is itself antiseptic, but that no precaution may be omitted, it is usual to have the vagina syringed out with some antiseptic solution both before and after the operation. When it is necessary to perform galvano-puncture this precaution is, perhaps, the more desirable.

The object of the galvano-puncture, in a large number of cases, is to establish a channel to the uterine cavity, through which the ordinary platinum probe or electrode can be passed. The trocar or needle which is used for the puncture is always made negative, and may be composed of any metal; steel, perhaps, takes the best point. The punctures are not made very deep, usually about half an inch, and the trocar or needle is allowed to remain in the tumour about five minutes while the circuit is closed.

The needles I have had made for puncturing the tumours are composed of platinum or steel of the shape shown in diagram (Fig. 3), and are fitted on to a handle. They are intended to be used with a speculum, but might be used without if the greater part were insulated, leaving only about an inch of the metal bare at the end.

When a tumour can be felt pointing, as is sometimes the case,

through the uterine wall on either side of the cervix, enucleation can be favoured by electrolysis in the same way as Dr. Greenhalgh did some years ago, by burning a hole into the capsule of the tumour with the actual cautery. To accomplish this by electrolysis, a metal electrode can be used, like that depicted in the accompanying sketch, and attached to the negative pole of a

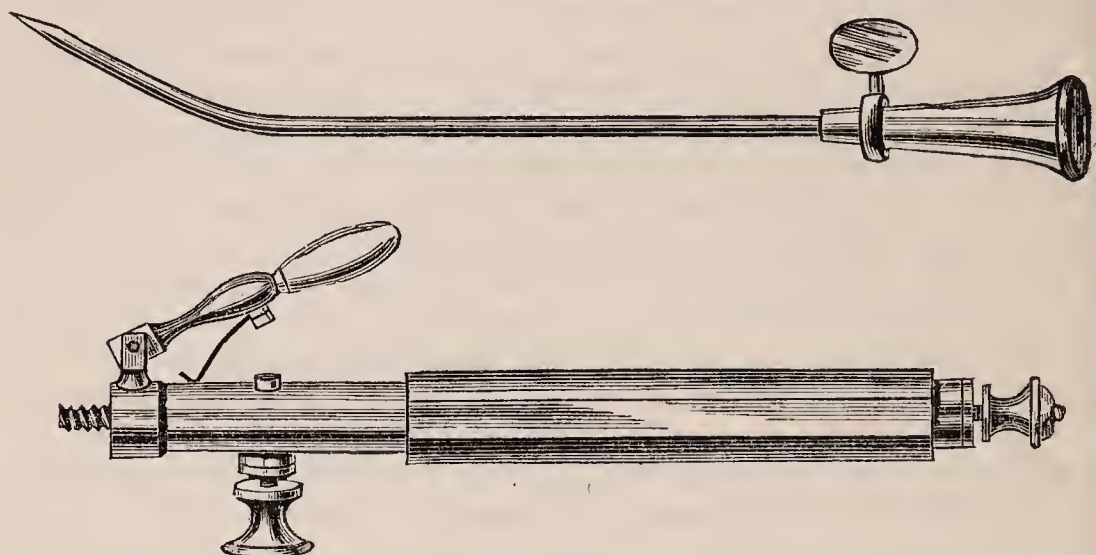


Fig. 3.

battery. With a strong current, a hole quite deep enough can be very quickly made. This instrument can also be used in the same way for hypertrophy or cancer of the cervix; the unpleasant smell which accompanies the use of the actual cautery is avoided.

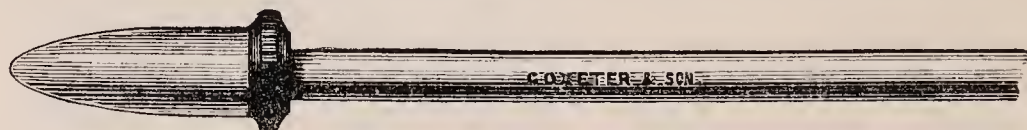


Fig. 4.

The treatment of fibroid tumours of the uterus by electrolysis is not so easy and free from danger as Dr. Apostoli has been led to declare, through his own intimate knowledge of electricity and the manner of applying it. In the hands of those unacquainted with batteries and their manipulation, many most serious mistakes might be made which would cause the greatest discomfort to patients, and possibly in some instances jeopardise their existence. Any sudden break to a current of the strength used by Dr. Apostoli might in some patients cause alarming collapse; but with due care, and with a thorough knowledge of the instruments used and the way to use them, the operation is not difficult, and the patient is spared any severe suffering. An anæsthetic is seldom necessary, it being an advantage to have the patient conscious, as by watching the countenance much important information can be obtained as to the amount of destructive change going on in the uterus.

The great danger inseparable from abdominal section, and the

uselessness of all medicinal treatment for the removal of uterine fibroids, makes this mode of treatment by electrolysis the more acceptable and of greater importance. There are very few fibroid tumours which do not cause some inconvenience and more or less distressing symptoms. In some cases they render life almost intolerable. The ever-constant weight and dragging pain; the interference with digestion, defæcation, and sometimes with micturition; the reflex neurotic symptoms and depression; the ever-constant ill-health, with exacerbations at the ordinary monthly periods, sometimes with downright acute pain or profuse hemorrhage, which incapacitates the patient for several days or a week; the drain on the vital powers produced by this incessant pain and sometimes constant loss of blood,—all these call for some relief beyond the usual exhortation to wait for the menopause or a useless visit to Kreuznach or Horncastle. Enucleation is often impracticable, and is never unattended with danger. In electrolysis we have a means of relief the application of which is not difficult to those who understand the medical and surgical uses of electricity. It is not unduly painful. It is, if properly applied, practically free from danger. If the tumour is not much reduced in size, the distressing symptoms are almost invariably relieved and the patient's general health improved; and she is not in a worse condition for more heroic measures, should they be deemed advisable, than before the application of electricity. The treatment is spread over rather a lengthened period of time; but, after the first or second application, no enforced confinement to bed is necessary or imposed upon the patient.—*British Medical Journal*, Oct. 1887, p. 702.

99.—ON THE GENERAL TREATMENT OF PUERPERAL ECLAMPSIA.

By GEORGE W. MILTENBERGER, M.D., Professor of Obstetrics in the University of Maryland, U.S.A.

[Dr. Miltenberger contributes to the Report of the Section on Obstetrics and Gynæcology of the Faculty of the State of Maryland, an exceedingly able and exhaustive review of the present position of this important subject. The earlier portions of the report deal minutely with the causation of eclampsia in general. The writer adopts the first part of Braun's definition, which says that "*Eclampsia puerperalis is an acute affection of the motor function of the nervous system, characterized by loss of consciousness and of sensibility, by tonic and clonic spasms,*" but takes exception to the second part, which says: "It (eclampsia) occurs only as an accessory phenomenon of another disease, generally Bright's disease in an acute form, which, under certain circumstances, spreading its toxæmic effects on the nutrition of the brain and the whole nervous system, produces these fearful accidents."

Dr. Miltenberger divides these cases according to their exciting cause into *centric* and *excentric*, and proceeds to speak of those two great classes of remedies: those which act upon the nervous centre, and those which act upon the seat of the peripheral irritant.]

Of all sedatives to the nervous centres, in appropriate conditions, there is not one which is so direct, so immediate and so powerful as blood-letting, V.S. As in the case of all therapeutic means which are active and positive, as powerful as they are for good, when properly timed and administered, equally powerful are they for evil when improperly used.

When venesection, as was once the case, was considered our sheet-anchor in this disease, while in some instances its use was followed by the most beneficial results, it must be confessed that the rate of mortality was much greater than it has been since it has fallen into general disuse. The disease was treated, as it were, by name; it was thought to be ever due to cerebral congestion, and, therefore, if it was continuous, the lancet was used again and again. I believe there are cases in which it is more powerful for good than any other remedy. Where we have all the evidences of active congestion, the swollen, livid face, the turgid neck, the deeply-congested eyes, the cord-like tension and fulness of the external veins, and the full, hard, resisting (sledge-hammer) pulse, he must be a bold man, indeed, who would withhold the lancet, if he had ever seen it used in such a case. And the more would we be inclined to use it when the attack occurred in a woman, strong, vigorous, well-nourished and plethoric. I have used it, and seen it used too often in appropriate cases, to doubt for a moment its efficacy.

We have, however, another thing to be considered here; we have seen that the brain proper, cerebrum and cerebellum, was to be studied in this connection in two phases, as the seat of certain centric causes of convulsion, and also of a set of eccentric causes, through irritation of the intra-cranial excitor-nerves.

But besides this, the brain enters into yet another relation with these convulsions. Independent of primary congestion, which may or may not exist, the convulsive attack, with the disturbance of respiration, with the compression of the returning veins of the neck, by the muscles, trachelismus, and the spasm of the glottis (laryngismus), induces secondary cerebral congestion, which may be fatal. As in epilepsy, the patient, at times, dies apoplectic, so also does this repeat itself in eclampsia.

Here, also, V.S. may afford the most prompt relief, and snatch from death a life otherwise lost. We see whence the lethal arrow speeds, and meet it accordingly. It may have been, from its success in thus warding off death, that it so long retained its place as the *summum remedium* in this disease.

However this may be, I am assured, that it still has and should have its place in proper cases, in their therapeutic management. And I believe still further that *veratrum viride*, which has from time to time of late years been pretty largely used, and with some success, acts in the same direction as a vascular sedative, though far inferior, and that where it has been used and with benefit, V.S. properly timed, would have been more active, more immediate and more beneficial.

While in such cases we can appreciate its advantages, we can as readily understand how, on the other hand, it would be absolutely injurious. And here again, we can see how its exclusive advocates may have been misled and induced to persist in its employment, even if injurious. Even if we adopt, *in toto*, the Traube-Rosenstein theory, that it is always dependent on anæmia, we know that then, as we have seen, we have vascular tension, and so at first V.S. may for the time, lessen this condition and give apparent temporary relief. But we equally well know the vessels will soon again refill by the absorption of serum, that while the quantity of the circulating fluid may be thus restored, its quality is being steadily deteriorated, and we are rendering it more and more hydræmic.

Fortunately, we have had placed in our hands, a remedy applicable to a much greater range of cases, not spoliative; and when properly used, free from danger—namely, chloroform. It stands at the head of the list of nervous sedatives, and since its employment, with our more precise knowledge of the pathological seat and entity with which we have to deal, the mortality has been reduced to 11 per cent., or as I before said, with skilful therapeutic and obstetric management, even below this figure.

Its *modus operandi* is evident, it sedates the nervous centres, it controls the spasms, it prevents the spasmodic closure of the glottis, with its most deleterious effects. By some, it has been used continuously, but I am convinced we obtain all its benefits by administering it freely upon the approach of each paroxysm, and withholding it in the intervals.

But at times, its action thus is not sufficiently continuous and permanent. We may check partially the paroxysm or abate its intensity, but it will still return. We can then, and often with decided benefit, resort to chloral, preferably, and if unconsciousness persists, necessarily, per rectum, 60 grs., and repeated in two, four or six hours. But should this too fail, we are by no means of necessity foiled or without resource, for we still have the *donum dei*, in form of morphia, administered hypodermically.

I suppose this is to most of you, an old and oft-told story; but the more frequently you have seen it, the more willing will you be to acknowledge, that we do meet with cases in which we have to run through the whole category, one after another, before we succeed.—*Trans. of Faculty of State of Maryland*, 1886, p. 148.

100.—ON THE LOCAL OBSTETRIC TREATMENT OF PUERPERAL ECLAMPSIA.

By G. W. MILTENBERGER, M.D., University of Maryland.

[Of the treatment of Eccentric or Peripheral Conditions which have some causal relation to Puerperal Convulsions, Dr. Miltenberger writes as follows:]

Of course, the genital organs, the uterus and vagina, are the first and by far the most important seat of peripheral irritation to demand our attention, and here, where we would *a priori* expect perfect unanimity of opinion, we find authorities on most points reliable, here widely disagreeing. Without entering here upon the question of the induction of premature labour, where eclampsia is threatened during pregnancy, we will speak of obstetric management during the paroxysms. Gooch dismisses the subject by saying, "Attend to the convulsions and leave the labour to take care of itself," and Schroeder equally curtly asserts that "especially no kind of obstetric manipulation is required for the safety of the mother."

But we cannot so summarily dispose of this, which we consider a most important practical point, and this interference or its mode must depend upon the stage of labour.

In the first place, recognising the extreme irritability of the nervous system, and the readiness with which, as we have seen, even slight irritations elicit the convulsions, we should avoid, as far as possible, all sources of reflex irritation, and, above all, unnecessary examinations or manipulations.

In the second place, although speedy delivery may be thought necessary, we should choose those which are least likely to excite muscular action. In the words of Tyler Smith, "the point to aim at should be, never to produce more irritation than we remove, and not to destroy the patient by an excessive temporary irritation instituted for her permanent relief." We should not, for instance, resort here to turning, unless in those cases where turning would be absolutely demanded, by the position, &c., if no convulsion existed, and under all circumstances, by Braxton Hicks' method, when possible. The irritation from turning would exaggerate immeasurably the dangers of the case.

If the convulsion occur in the earlier stage of labour, with the os still undilated, we would not hesitate to rupture the membranes and evacuate the waters. I have several times in consultation, when all other means had been used in this stage without avail, found the convulsions materially abated, and in a great number entirely aborted by this simple means. It is true, we may thus increase uterine action, but we lessen the size of the uterus, the pressure which it exerts, and the irritation which it excites. The partial evacuation of the organ seems to act, as does the partial

unloading of the stomach by an emetic, or of the bowels by a purgative, in other classes of eclampsia.

When this has been done artificially or spontaneously without avail, and prompt delivery is required, with the os undilated, we can use Barnes' fluid dilator, with but little irritation; with the os dilated or perfectly soft and dilatable, I would at once resort to the forceps, under anæsthesia of course, as the least irritant means we could employ, and I can unhesitatingly assert, that I have never had occasion to regret their application under such circumstances.

In an extreme case, where I deemed speedy delivery absolutely necessary for the safety of the mother, and the forceps failed, I would rather resort to craniotomy than to turning. This on the ground that the mother's life should always be preferred to that of the child, and that in this crisis we can never be certain that the child will survive; we have seen, one in two children—and by some statistics a larger portion—are lost in these cases of eclampsia, and we know further that, although born alive, the child is liable to die soon after birth.

Even more discrepant have been the views and opinions of obstetricians as to the propriety of inducing premature labour where eclampsia is threatened during pregnancy, or has already occurred. It is true that, at all events, until lately, if not to the present day, the majority, as to number, oppose this *dernier ressort*, from the danger to the mother, and partly from the dread of sacrificing the child. And they add, still further, that not unfrequently from the act of convulsion itself, uterine action is lighted up, and, therefore, the intervention of art for this purpose is not required.

As to the latter point, there is some show of truth. It is true that nature not rarely responds and completes the process, but we know, on the other hand, that this does not always ensue, and when it does, it may not be in time to save the life of the child, or ensure the life or the subsequent safety of the mother. In addition, we know, as we have seen, how often the child is lost in these cases, and we are the more justified, therefore, in disregarding it.

With regard to the mother, we understand her danger continuing and constantly increasing while we permit this state of things to go on, and the almost certain relief which follows prompt delivery.

Besides the uterus, however, other organs are at times the seat and starting point of eccentric or peripheral irritation, and although of far less frequency and of minor importance, should not be neglected. As in eclampsia in children, the stomach from repletion, or from the presence of indigestible substances, or the intestines from constipation and the presence of scybala may thus act, and must receive attention.—*Trans. State of Maryland*, 1886, p. 151.

101.—ON INTERFERENCE WITH LOCOMOTION AS A UTERINE SYMPTOM.

By GRAILY HEWITT, M.D., F.R.C.P., Obstetric Physician to University College Hospital.

Considering the very large number of cases in which "inability to walk easily," "pain on walking," or various modifications of the symptom occur, it is remarkable that so few practitioners, comparatively speaking, pay any attention to it, or even treat the symptoms seriously. There can be no doubt, however, that patients themselves look upon this symptom as a serious one, and indeed in most cases speak of it when they are allowed to express their unbiassed opinion on the subject, as an inconvenience which most seriously affects their comfort in life, and for relief of which they would be willing to make great sacrifices.

The above is a general statement. Any amount of evidence is obtainable in regard to its accuracy by interrogating patients, which should be done, not by leading questions, but by requesting them to state what are the principal inconveniences of which they complain. This method of inquiry will reveal the fact, that patients attach more importance to this inability for locomotion as interfering with their comfort than almost any other. For this reason, if for no other, this symptom is deserving of particular attention, and its explanation is a matter of great interest.

There is no difference of opinion as to the necessity for rest and the horizontal position in cases where there is found to be present marked tenderness or signs of inflammatory action in the uterus or its immediate neighbourhood, the presence of such inflammatory action being revealed more or less decidedly by the results of a digital examination. It is not necessary to point out in such cases as these that difficulty or pain in locomotion are connected with, and due to, the inflammatory condition of the uterus or structures adjacent. In such cases no one considers it surprising that the patients should prefer to keep quiet and the medical attendant usually and very properly advises that the horizontal position should be maintained.

There is another class of cases in which the pain on movement is found to be connected with laceration of the cervix and os uteri during some previous labour. These cases present themselves oftener than is generally supposed, the torn surface is continually irritated and stretched when the patient is walking or standing, eversion of the lining of the cervix occurs and a chronic source of irritation is set up. It is not infrequent in such cases to find also, from time to time, small localised cellutic exudations, and more or less tenderness to the touch.

The cases I have however more particularly in view, are those in which no particular sign or presence of inflammatory lesion of the body of the uterus or of the cervix and os uteri is detected on

vaginal examination, no tenderness to touch, and an absence indeed of what may be termed spontaneous pain. The characteristic is, that so long as the patient remains quiet, there may be little discomfort; but the upright position, or the act of walking, induces pain or an uncomfortable sensation which is so decided, that in the end the patient avoids walking as much as possible. Thus originates in not a few cases a chronic invalidism, the starting point of which will, on inquiry, generally be found to have been habitual pain on attempting ordinary exertion.

Patients suffering in the manner now described, and not presenting obvious signs of presence of inflammatory action in the pelvis are often looked on as fanciful, or hysterical, or disposed to exaggerate their sufferings. No doubt there are differences in regard to the manner in which different individuals bear pain, but the pain nevertheless has to be accounted for, and in the most typical cases it must be remarked, the patient is obviously and strongly desirous of living an active life, and anxiously seeks means to enable her to do so.

There are, it should be here remarked, cases in which general debility, associated with disorder of the heart or lungs, or general nutrition giving rise to a certain incapacity for locomotion, but in such cases what the patient complains of is prostration after walking, whereas in the cases to which I desire to call attention, the walking power is often really good, but the exercise of that power gives rise to such discomfort internally that it cannot be kept up for long together.

Associated with the presence of pain in one or other groin, or in the back, there is frequently experienced a bearing-down sensation. The most common seat of this pain is in the groin or the pelvis on one side or other behind this spot. Now the question is, what interpretation is to be placed on the pain arising from locomotion when not obviously connected with some inflammatory condition? The answer is that the movement in question is painful because it imparts an unusual amount of movement, or an unusual kind of movement to the uterus or to certain parts of the uterus. The uterus enjoys naturally a power of motion backwards, forwards, laterally, and upwards or downwards within certain restricted limits. It enjoys flexibility also within certain limits. Unusual flexibility is not seldom associated with excess in degree of the other movements, as well as with peculiar tendency to lateral movements.

These excessive movements are, or may be, painful and productive of pain. They are liable to be produced by standing or by locomotion. Frequently they are brought about in the first instance by excessive locomotion or analogous causes (straining, over exertions, &c.), and subsequently the evil state of things thus produced is intensified and temporarily aggravated by even trifling exertion.

The proof that the foregoing is the true explanation is easily obtainable by watching a few cases, and observing the effects produced on the position and shape of the uterus by exertion. Not less useful in obtaining valuable evidence is the analysis of the patient's symptoms as described by herself, whereby it is made often quite clear how and why it is that the discomfort complained of arises.

In most cases where this kind of pain is experienced, the uterus falls lower than usual in the pelvis, but more generally we find that the body of the uterus is the part which particularly is to be felt lower than usual. In fact, according to my experience simple descent of the uterus, unattended by marked version or flexion, gives rise to little inconvenience within certain limits. As regards retroflexion, most authorities are content to regard this as a real pathological condition. As regards ante flexion, however, which I believe is responsible for the pain now under discussion in the large majority of cases, there is less unanimity. In fact, many deny that anteversion and ante flexion are pathological at all. True, slight ante flexion and slight anteversion may be admitted as a definition of the shape and position of the normal uterus, but there are various degrees of this anti-displacement and flexion met with, which as the result of my experience are liable to be attended with grave symptoms. The pain described above, as produced by locomotion, is one of the grave symptoms produced by severe anteversion or ante flexion of the uterus. The reason that this has not yet been generally admitted is, I believe, that sufficient pains have not been taken to differentiate slight normal anteversion and ante flexion with a properly mobile uterus from severe degrees of this kind of displacement and change of shape. The normal ante flexed uterus oscillates within slight range, recovering its position and shape after moderate disturbance. The abnormally flexible uterus gives way to a greater extent, and the extra amount of flexion, as well as descent involved, gives rise to pain. In cases where the uterus has gradually fallen lower and lower it is apt to become fixed, and does not recover its true position after exertion. This constitutes a condition in which fresh exertions occasion pain owing to the increased pressure downwards, and under these circumstances, the slightest exertion gives rise to discomfort.

"Uterine dyskinesia" is the term which I have employed in describing the symptoms specially defined in the foregoing remarks. It is as common as leucorrhœa, and more common than most other uterine symptoms, and has a very definite and well-marked place in uterine symptomatology.

One of the most important arguments adduced in reference to "uterine dyskinesia," its nature, and explanation, is that whatever tends to preserve the uterus in a state of repose is almost invariably successful in giving the patient relief. In acute cases of

flexion, even of the worst kind, great benefit is derived from placing the patient in such a position that the force of gravity no longer acts unfavourably upon the uterus. Thus, in cases of ante flexion the recumbent dorsal position with hips raised is the one to be selected, whereas in cases of retro flexion the very opposite position is necessary. Still more marked results follow when steps are taken by internal mechanical treatment, to raise the fundus whereby the flexion is lessened in a more decided manner. Now, the fact that these beneficial results do follow, and the patients obtain—it may be said almost invariably—relief by these positional or mechanical methods of treatment, constitutes an argument of no little value in favour of the view of the subject which has been above maintained.

In the foregoing observations I have made no attempt to show why it is that excessive movements and change of shape of the uterus therewith associated, give rise to pain during locomotion. I have simply insisted on the fact that difficulty in locomotion in women is so very generally met with in cases where these excessive movements and changes of shape of the uterus exist, that there can be no doubt that there is an intimate relation between them, the latter as cause, the former as the effect.—*Medical Press and Circular*, May 4, 1887, p. 413.

102.—ON THE VALUE OF HODGE'S PESSARY.

By ALEXANDER DUKE, F.R.Q.C.P.I., Ex-Assistant Master,
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Without at all agreeing with those who think that the primary cause of all female complaints can be traced to uterine misplacement, I still consider that there is a large percentage of such cases to be met with due to that cause; and it is a most fortunate matter that by the judicious use of a Hodge's pessary we are enabled to give more relief in cases of retro flexion and retroversion (the most common forms of uterine misplacement), than by any other means with which I am acquainted.

This pessary is the original from which all the numerous so-called improved uterine supports are taken; and it will seldom chance that those who fail to give relief with a properly fitted "Hodge" will be fortunate enough to succeed with any of the numerous uterine supports sold by the instrument makers.

Emmet says very forcibly on this point: "I have never known a practitioner who was able to fix this pessary properly who was not fully satisfied with the benefit derived from its use."

The position of the patient during the introduction of the pessary is most important, and the genu-pectoral, affording as it does the favour of gravitation to the uterus, and, in addition, helping greatly to retain that organ in the desired position till

a suitable pessary is chosen and placed *in situ*, should be the position as a rule adopted, unless contra-indicated by some pectoral or cardiac lesion. In no case should a pessary be introduced till the uterus has been replaced as nearly as possible in its normal position.

How often is one blindly inserted while the patient lies on the side or back, probably after the uterus has been rudely rotated forwards by the sound (on the withdrawal of which instrument it is almost certain that the temporarily replaced organ will return to its abnormal position), or the impaled organ is held firmly forwards while the pessary is forced into place, the handle of the sound being used as a guide. All this can be avoided by adopting the position I recommend and using my uterine repositor, which acts externally to the uterus, and so dispenses with the use of the sound in these cases altogether, except, perhaps, for the purpose of diagnosis. There are several cases on record where the womb has been perforated by injudicious attempts to use this instrument, and this danger should be remembered when efforts are being made to remedy a misplacement by its means, as still recommended by some of the latest text-books on the subject. In my opinion neither the uterine sound, nor any other instrument, however ingenious, introduced into the uterine cavity, should ever be used to remedy a malposition, but should only be used for diagnostic purposes, for which, I believe, the "sound" was originally designed.

I have often remarked that in women with broad pelves there is much more tendency to misplacement of the womb, so that the value of this pessary, if only by affording a certain amount of fixity and rest to the organ, is certainly not the least of its many advantages. I have found it very useful to examine patients in the erect position where symptoms point to flexion or prolapse, as the laxity of the ligaments can be much more easily determined by the mobility of the uterus upwards.

It will also be found useful to direct the patient to bear down during the examination, when, by the patient's voluntary efforts, the uterus can be felt to come down much lower in the vagina, shortening the fornices, and so giving greater facility for diagnosing a flexion or prolapsed ovary. Should the uterus be tender to the touch, it will be advisable not to introduce a pessary, or, indeed, attempt to remedy the displacement till local depletion has been practised or a glycerine tampon introduced and allowed to remain *in situ* for twenty-four hours, after which the uterus will probably tolerate manipulation.

There are some who maintain that it is quite impossible to cure a chronic misplacement by means of pessaries; for my own part, I am convinced that if the rules which I invariably follow myself were generally adopted, the permanent curability of misplacement by the proper use of this pessary would be universally admitted.

The points to which I attach most importance in this connection are: First, the replacing of the uterus in as nearly as possible its normal position by means of the repositor. Secondly, the judicious selection and application of a suitable instrument; and thirdly, the graduated change of pessary at regular intervals.

By substituting a slightly longer instrument at each change of the pessary (till the normal position is retained without the necessity for wearing one any longer), I find, if the last instrument applied has been worn for a sufficient time, there is no return of the misplacement whatever. I am a firm believer in the Hodge's lever action, when properly placed *in situ*, and this can be put to ocular demonstration by raising the posterior wall of the vagina with the duckbill speculum; when, if the patient be in proper position, and the pessary mainly held in place by the lateral pressure of vaginal walls, it will be observed to move backwards and forwards by each inspiration and expiration of the patient. It is this valuable property of the pessary which slowly but surely raises the body of the uterus, and by taking the weight and strain off the ligaments, allows them gradually to regain their natural tone and elasticity, a point almost as important as the reposition of the organ itself. The periodical change of pessary till the normal position is permanently obtained is, to my mind, one of the most important points in the treatment, the neglect of which rule has (in some cases) caused this valuable instrument to be unjustly condemned.

I have on several occasions heard patients complaining of the presence of a pessary (which, if properly adjusted, should never be the case), and stating they had been assured by the physician who had introduced it, that the pain and discomfort complained of could not possibly be due to that cause; when, on examination, the instrument has been found to be at fault, either by being too long or improperly curved, and so by pressing on the neck of the bladder, or obstructing the circulation in the soft parts, exemplified in a marked degree "the vicious action of the Hodge." Well may Emmet say, in his well-known work, "The practitioner to become an expert in fitting a pessary that may do no harm must have a decided mechanical talent."

Another of the valuable points of advantage in the use of this instrument is, that even should the misplacement take a considerable time to rectify permanently (which time can be roughly calculated from history of case and date of primary cause), the strain being taken off the uterine ligaments, and in many cases the pelvic nerves as well, it is a pleasure to see the patient, who a short time before limped into the study bowed down with pain, enabled to leave it before long with marked relief to all her symptoms, again erect in posture, and showing, beyond controversion, the invaluable aid to be rendered by a properly adjusted, well-fitted Hodge's pessary.—*British Medical Journal*, July 9, 1887, p. 63.

ADDENDUM.

103.—THE THERMOPILE AND SECONDARY BATTERIES FOR SURGICAL AND MEDICAL PURPOSES.

By ALEXANDER OGSTON, C.M., Professor of Surgery in the University of Aberdeen.

I wish to direct the attention of the profession to a method by which electricity in all its forms can be readily and easily obtained at all times, by arrangements that are easily and conveniently managed, that are little liable to get out of order, that can be procured at a moderate initial expense, and cost little or nothing afterwards, that are convenient for transport, and are in all respects attended with the minimum of inconvenience. I do not claim that the arrangement I advocate the adoption of is all we could wish it to be, but believe it is a very great step indeed in advance of the plans hitherto proposed, and is likely to satisfy a large number whose employment of electricity in practice is at present hampered or prevented by the drawbacks that have been mentioned. The plan is not my own. It was suggested to me last year by Mr. J. W. Swan, the well-known inventor of the incandescent lamp that bears his name. He pointed out to me that the employment of the thermopile as a generator of electricity would probably be of considerable service to members of our profession, and he was good enough to interest himself in the matter and work out for me, in a manner I could not myself have accomplished, the practical steps towards effecting this. I explained to him our wants, and he devised the means of meeting them. The thermopile, which forms the starting-point of the arrangement, is composed of four groups of German-silver and zinc-antimony elements, each group containing twenty pairs in the form of a wheel, six inches and a half in diameter, in which the elements are the spokes. The four coronal groups are placed on a wooden stand, about sixteen inches square, and are connected together in series—i.e., the positive pole of one group is attached to the negative of the next. Each group has in its centre a gas Bunsen burner, the burners all supplied by a common pipe, but with taps so placed that they may be used separately if required; and when the burners are lit, the difference of temperature between the outer and inner ends of the pairs of elements generates a current of electricity, feeble indeed, but very convenient, since its feebleness can be compensated for, and its convenience, requiring as it does only the turning on and lighting of the gas, is unquestionable. These thermopiles are made by Rebicek, of Prague. They give an electro-motive force

of about one-tenth of a volt per pair of elements—that is, four volts for the four groups, equal, say, to seven or eight Daniell's and three or four Grove's cells, power sufficient to illuminate a small incandescent lamp. A slight alteration in the thermopile would adapt it for being used with spirits of wine, or even with paraffin. Several of these thermopiles can be arranged in series, with a gain in electro-motive force corresponding to the increase in the number of elements added, but at the cost of an increase in initial expense, and, from their bulk, a lessening of convenience. Were they to come into general use, their bulk could be considerably reduced by some slight alterations.

The thermopile alone, however, is insufficient for the purposes of the practitioner. To render it useful it requires to be supplemented by the secondary battery, or accumulator, as it is sometimes called. With this addition in a suitable form, portability being the chief point, the apparatus is complete. The secondary batteries, which Mr. Swan designed for me for this purpose, consist of two portable vulcanite boxes, each three inches square and eight inches high. Each box contains two cells arranged on the principle of Planté, with elements of lead and peroxide of lead, in dilute sulphuric acid of 1 to 10 in strength. Each is closed by an indiarubber washer and a lid clamped on by a screw, to prevent their spilling when carried, a ring-handle being attached for this purpose. They can, like ordinary galvanic cells, be used separately or in conjunction. Each weighs, when filled and charged, 6 lb. 1 oz. Mr. Swan writes concerning them :—"The object in dividing the batteries is that there may be no unnecessary weight to carry where the power of one battery (two cells) is sufficient, and it will be sufficient for surgical lamps for eye and throat examination. For electrical cautery the combination of the two batteries is needed. The thermopile has just power enough to charge one battery at a time when the gas is not very fully turned on—that is, when the flame just burns above the talc disc. Under these conditions the thermopile will send $\frac{1}{2}$ or 0.6 of an ampère through one of the batteries, and that is what is proper for a battery of this size. While charging, the cover should be removed, and several folds of blotting-paper laid on the mouth of the battery to intercept the bubbles of gas that rise from the liquid. It is necessary to make up for this loss of liquid by adding to that in the cells sufficient to cover the plates. The battery should not be allowed to become completely discharged, and, after using, it should, as soon as possible, be fully recharged and left so. The only part of the battery likely to get out of order is the connection between the positive plate and the outside terminal, but it is very easy to repair, and I think probably little or nothing beyond that will require to be done to the batteries for a long time. Several folds of blotting-paper round the joint of the lid and case, or a waterproof bag to

ADDENDUM.

contain the whole, will prevent dribblets of acid staining the clothes of the person carrying it."

In using these cells I have not found any drawback to them, save the slight one mentioned by Mr. Swan—viz., an occasional tear of acid pressed out when they are used, closed, or carried, by the pressure of the accumulating gas within. On the contrary, they are among the least obnoxious occupants of my work-room. They stand on a table in a porcelain photographer's tray or common plate beside the thermopile, for the convenience of charging. The tops are removed, because, if they are kept screwed on, the imprisoned gas that is disengaged forces out a few drops of liquid past the washer, and this trickles down; while if they are removed no spilling occurs, and they remain dry and clean. When about to be transported, the lids are screwed on, blotting-paper is put round their upper ends to catch any tear of acid, and, thus arranged, they can be carried about a whole day with perfect convenience. If the liquid in the cells diminishes, a few drops of dilute acid are added by a pipette. After they have been used for any length of time, the thermopile is lit, its conductors are connected with one of the batteries at a time, and in a few hours it is completely recharged, as may be seen by the free escape of gas from the plates. The cells are connected at will with two pairs of insulated cord conductors that pass along the wall and through the partition into the consulting-room. The two pairs of conductors enable the batteries to be used simultaneously for different purposes, one being attached to each pair, or to be both connected with one pair as desired.

I have during the past two months subjected the arrangement to the severest tests of practice, having used it for nearly every purpose save that of extracting steel by the electro-magnet, and have every cause to be satisfied. The batteries yield a sufficient constant current, can be attached to the induction coil for faradisation, answer well for electrolysis, and are very convenient for illuminating the mouth and examining for translucency in cystic tumours. They are very efficient for the galvano-cautery, easily heating, when fully charged, three or four inches of stout platinum wire white hot, and fusing thinner pieces. When employed for electric illumination in the work-room, the conductors from one battery are connected with a two-candle power Swan lamp placed in the hollow end of a piece of bamboo, which shades the eyes of the observer from the light, and, acting as a handle, enables it to be directed towards the part to be illuminated or introduced into the mouth. When both batteries are attached I can light up my consulting-room by means of a five-candle lamp that is suspended by a bracket from the wall. In testing the translucency of cystic tumours, the two-candle lamp in its bamboo handle is pressed against one side of the cyst, and, the swelling being shaded by the

hand, the other side of the tumour is observed. In cases of hydrocele of the tunica vaginalis, and in one case of congenital cystic hygroma of the neck, the translucency was well brought out, and it is much more convenient than the candle or wax taper, especially in children, whose incautious movements cause danger of scorching them. In the use of the endoscope the greatest inconvenience is felt from the heat of the lamps used in connection with them, and from the necessity of keeping them upright. This inconvenience is a very great drawback indeed to its employment in examination of the œsophagus, the rectum, and especially the urethra, where it is occasionally of the greatest service. The introduction of a two-candle power Swan lamp into the instrument creates quite a revolution in this respect, and converts the endoscope from a very cumbrous into a most manageable aid to diagnosis. When required for faradisation the conductors are simply attached to the coil standing in the consulting-room. Both batteries have to be attached to the conductors for electrolysis, electric cautery, or the use of the constant current. In galvano-puncture I have not yet had an opportunity of using them, but in electrolysis they answer well, one needle being attached to each conductor. For electro-cautery or the galvanic écraseur the instrument is attached to the conductors and the circuit completed at the moment desired by the button being closed. I was pleased with its action in cauterising the pharynx, and in burning a small canal that had to be closed after an extensive operation for cleft of hard and soft palates. In using the constant current a sponge electrode is affixed to each terminal of the pair of conductors. The method of attachment most convenient is that of a pin slipping into a tube or socket, which is quickly connected or undone, or, when needles are used, joining them to the conductors by a thin bit of silvered copper wire.

During the two months in which I have employed the above arrangement, it has been in almost daily use, and its efficiency has been tested in every way; yet the secondary batteries have only thrice required to be charged by lighting the thermopile for a few hours. The convenience of the whole, and its superiority to any of the methods hitherto suggested, are so very striking, that I unhesitatingly recommend it to the notice of my professional brethren in the very strongest terms.

Note.—The price of the thermopile is about £8; each of the secondary batteries costs 55s. They can be had through the firm of Mawson and Swan, Mosley Street, Newcastle.—*Lancet*, April 30, 1887, p. 868.

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